

AMERICAN VETERINARY REVIEW.

JULY, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

MOLASSES AS FOOD.—In the February issue of the REVIEW of this year, No. 11 of our last volume, there appeared a letter from Dr. Griffin, veterinarian to the 5th U. S. Cavalry, relating a series of experiments he had made, concerning the advantages that could be derived, in campaigns under special climates, by the use of molasses added to the daily ration, replacing a proportional quantity of other food.

Probably the excellent communication of our friend passed unappreciated, and I plead guilty to having failed in giving it justice.

Recently, however, we find that it had been given the hospitality of the pages of one of the English journals, and *de novo* our attention was directed to it.

A short time before, in a visit that I made to the French horse-show (Concours hippique) in Paris, while passing through the various exhibitions which were made in connection with the show, I noticed a little side exhibition where molasses bread, molasses biscuits, were sold. These are recommended as a supplement to horse food.

And finally, lately, the subject became the object of a long and most interesting discussion at the Société Centrale, in which very important facts were presented by the learned director of the cavalry of the Compagnie Générale des Omnibus,

my friend Mr. Lavalard, and after which I had the honor of relating the experiments of our friend Griffin, by extracts that I made from his letter alluded to already.

To complete this series of events, it was my pleasure to accompany a gentleman of Boston through some of the horse establishments here, where we had the opportunity to see molasses feeding carried out on a large scale. My American friend, who is well posted on horse matters, and keeps a large number of them, acknowledged to me that this was altogether new to him, and that he had never heard of it in the States.

All the above facts are my reasons for the present article, and for the following facts that I find in Lavalard's article.

It seems that it is true, thanks to the researches of MM. Chauveau and Grandeau, that sugar substances have found their way into the alimentation of domestic animals. But, although from French origin, it is only in Germany that they found their practical application. Many compounds have been made, some of which proved more satisfactory than others: oil-cakes, corn cakes, remains of wheat, bran, cut straw, peat, blood, bread, etc., mixed with molasses, have been tried by many experimenters. Molassed peat seems to be the one that has given the best results, and a special preparation of that kind, under the name of "Molassine," is to-day used in the German, Austrian and Russian armies.

Similar trials have thus been made with it in Paris, in two large establishments, and from the general total of observations made, the following conclusions have been adopted:

(1) That there is no danger nor inconvenience whatsoever to give in the daily ration of a horse at least one kilog. of molassed peat, of good quality, in the proportion of 20 per cent. of peat and 80 of molasses.

(2) That to the extent of one kilog., at least, molassed peat takes absolutely the place of the same quantity of good oats.

(3) That by this change of diet the general condition, muscular power, energy to work, health, not only remains perfect, but the coat looks better and more shiny.

(4) That with horses subject to colic and indigestion the attacks are less severe, less frequent and sometimes disappear.

At the Campagnie des Omnibus, where 15,000 horses are kept, they are all following that *régime*. The typical ration for horses weighing between 500 and 600 kilog. is as follows :

Crushed oats, corn and beans mixed 7 kil. 500.

Molassed peat - - - - 2 kil.

Cut straw - - - - between 3 and 4 kil.

No hay whatever.

The old ration, which would have cost in ordinary times between 2 francs 50c. to 3 francs, is reduced to 1 franc 79c. (from 50 to 60 cents to a fraction over 35 cents.)

We have seen the horses of one depot of 1500 horses all fed with this ration, and whose work covers a distance of 16 to 18 miles a day, return from their trip in splendid condition and as full of energy as could be desired.

Let us read over Griffin's article and we will find that all he has so well observed are matters of facts, and that he deserves credit for calling attention to a subject which, we believe, is still little thought of, if not unknown in the States.

* * *

DISTEMPER VACCINE.—Some months ago I spoke of a series of experiments, which were to be carried out by a commission appointed by the Société de Médecine Vétérinaire Pratique to test the value of the Phisalix distemper vaccine. I will to-day tell our friends of the results obtained, as they were presented by the secretary of the commission.

Three questions were to be answered :

(1) Give the disease to young dogs free from previous infection, by inoculating them with culture of the virus made by Dr. Phisalix ;

(2) Show that dogs which had had the disease were immunized against an injection of the virus ;

(3) Vaccinate pups, two or three months old, which had not had the disease, with 2 or 3 inoculations made with attenuated

cultures of increasing virulence, eight or ten days after the first inoculation. Half of those pups were to be tested afterwards with virulent culture, the other half to be exposed with the first also, in being put in contact with diseased dogs.

The first part of the experiment was carried out without difficulty. Four dogs were inoculated; all died with symptoms of the disease, more or less acute. Two other witnesses, which had not been inoculated, but had lodged with the others, took also the classic form of the disease and died in 21 and 35 days.

This experiment proved that the inoculated microbe was the agent of distemper; that it reproduces the acute and chronic forms of the disease, and that dogs, rendered diseased by the inoculation, infect healthy subjects living with them.

The second part of the experiment was not as favorable to the consideration of Dr. Phisalix. Its object was to show that the inoculation of the attenuated microbe confers immunity. That was the question which interested the commission in its practical application.

To carry it out, seven dogs between two and three months of age, were inoculated with 3 cc. of very weak culture. Unfortunately, after the operation, they were kept for four days in contact with two other sick dogs, and in the same kennel. Of these seven dogs, four took the disease with the characteristic symptoms, after an incubative stage of no more than 22 days. Out of these seven dogs, only two survived. One was slightly sick, the other, the only one which resisted the second inoculation of more virulent culture, presented, however, the symptoms of the disease. With all, a painful cedematous swelling occurred at the seat of inoculation. Two had pustular eruptions on the abdomen and in the groins.

Considering that those dogs had been kept exposed four days after the first inoculation, plans were laid out by which this second unsuccessful trial should be made over again under strict conditions, viz., young age of the pups, virgins from disease and kennels perfectly free from germs. Unfortunately for some reason or another Dr. Phisalix declined to submit his vac-

cine to another test, and the commission considered its work at an end.

It is very unfortunate that such failure should have crowned the efforts of the commission. The inventor of the method claims to have a large number of professional statements (some 1200, I hear) testifying to results entirely contrary to those presented by the commission. Why should he retire a proposition that he was first to make? Mystery!

But in the meanwhile, and to guard our friends from too hasty desire to advocate the method, let me give them briefly what Dr. A. J. Sewell, F. R. C. V. S., tells of the vaccine in the *Veterinary Record*:

"I have had an opportunity of trying Dr. Phisalix's serum for vaccinating dogs against distemper, but the results in my hands have been extremely unsatisfactory. . . . The vaccinations were carried out under antiseptic precautions. All the dogs without exception contracted the disease, when they came in contact with an infected dog. . . . I have just seen an unsolicited letter from a gentleman. He had fourteen dogs inoculated, and these afterwards became infected, when brought in contact with the disease. . . . The conclusion I have come to is that vaccinating with Dr. Phisalix's serum has no effect one way or another."

Until proofs to the contrary, I entirely agree with Dr. Sewell.

ANOTHER SEVEN-DAY WONDER.—While the results that I have just been relating on this distemper vaccine may, for the present at least, be classified under the list of scientific disappointments, a consolation remains to Dr. Phisalix, viz., that he is not the only one who has met with such dissatisfaction.

I recently mentioned in one of my "chronicles" the sensation which has been created in Italy in relation to a new treatment for foot-and-mouth disease, which by the name of its preconiser has been baptized the "Bacelli method." In my first article I told how it was received, patronized or objected to, and

how the Italian press was filled with articles relating to the new treatment, now from its advocates and again from its adversaries.

It seems that after all the advice given by some of those, viz., "To hurry up and cure while the remedy does it," was not altogether exaggerated. The information that is coming from almost every part of the world seems to be unanimously against it, and although good reports are still now and then read of in Italian veterinary journals, yet in them also, as well as in those of Spain, Germany and Switzerland, we read of a general condemnation of the method.

According to Prof. Hirzel, of Zurich, the small-dose treatment, by subcutaneous or intravenous injections, has had for results, in animals affected with an "extraordinary mild" attack, to produce only mercurial accidents. In the canton of Zurich and of Fribourg, trials made on quite a large number of animals, not the slightest curative effects were noticed, but, on the contrary, mercurialism of more or less severity; and in Italy the list of failures continues to increase.

This is not all. According to recent information, it seems that the method does not make victims only among bovines, but also among those who recommend and apply it. A veterinarian is sued for damages by an owner, whose stock has been treated by the method with sad results. Others have suffered as severely by the loss of customers, who preferred to resort to the services of a "less fashionable veterinarian."

Minister Dr. Bacelli does not like the look of things—for him, if the results are so disastrous, it is because the veterinarians are ignorant. Physicians must take their places. And Bacelli (the physician) is revenged by Bacelli (the Secretary of Agriculture), who proposes to give the diploma of veterinarian to physicians who shall follow a course of veterinary lectures for six months. It is also reported that Prof. Boschetti, of Parin, who was the first to call attention to the dangers of the famous treatment, has been the subject of a private revenge from Bacelli (the Secretary). Promoted to a higher professor-

ship, his nomination was refused, and not confirmed by the Secretary of Public Instruction, through the intrigues and influence of his colleague, the Secretary of Agriculture, Dr. Bacelli.

"*Le ire Baccielane*" (the hates of Bacelli) were satisfied, and still his "*mirobolanti invenzione*" (wonderful invention) remains another scientific disappointment.

Of those I shall probably have no occasion to speak any more.
A. L.

THE LEGITIMATE FIELD OF THE A. V. M. A.

This very important subject is being agitated by our friend, the editor of the *Journal of Comparative Medicine*, and the REVIEW is convinced that he is treading upon very dangerous ground. It does not believe that he is, figuratively speaking, climbing a veterinary Mt. Peleé, and that an eruption, belching forth rivers of lava and tornadoes of crater dust, is at all imminent. But we fear he is advocating a doctrine which means retrogression for the national veterinary organization—an association which in the past ten years has risen from a position of comparative insignificance to a condition which should be the pride of every veterinarian in the land. Brother Hoskins has done as much as any one member of that organization to bring it to the commanding place which it holds, and for that reason his attitude must command the respectful attention of those who are to shape her precious destiny. We have recently seen the learned German savant Koch, supported by a world-wide reputation as an authority upon the subject of tuberculosis, make what most of his fellow investigators believe a fatal mistake of judgment and conclusion, and it is not at all impossible that our journalistic *confrère*, honest as he undoubtedly is in his convictions, has followed in the footsteps of the Berlin professor.

It is the boast of the profession that at our annual gatherings there will be found intellectual food for every member, no matter in what field of veterinary science he may labor. The comprehensive circular just sent out by the Association's ideal Secretary laid particular stress upon this very point, and it is, we

believe, conceded by the best minds within the Association that the variety of the veterinary field, great as it is, cannot be so diversified but that all of her children can brood under the broad wings of the parent association. We sincerely trust that the day will never come when any member of the veterinary profession can truthfully say that he has failed to attend a meeting because the programme contained little of direct interest or benefit to him. The *Journal* says substantially that surgical clinics and practical papers should be omitted from the meetings of the national organization, their proper place being at State and local gatherings, and, further, that if the private practitioner is unwilling to journey across the Continent to listen to and take part in the discussions of higher subjects alone, the Association can well afford to dispense with him. This is, probably, the boldest stand which has ever been taken by a member of that organization, and it is for the purpose of placing the subject squarely before the membership, in case such a proposition is brought before them at the approaching meeting, that this article has been written.

It is undoubtedly true that all true veterinarians take an interest, and most of them a deep one, in all the great questions which mean progress along the line well termed "State Medicine," but the concern of the man engaged in private practice is not of the same nature and depth of him who is working in that particular field. He is glad to read and absorb all that is written by those who make such subjects their life-work, and he rejoices sincerely as one after another of the great problems reach their solution; he points with pride to the work thus accomplished by his brother veterinarian, and claims all the credit of such discoveries for *his* profession. Who, for example, does not narrate with righteous egotism the wonderful work accomplished by the veterinarians of America through the Bureau of Animal Industry in stamping out forever from this country contagious pleuro-pneumonia, even though he may not personally have ever seen a case of that disease? What veterinarian does not rejoice at the original investigations of Smith and Kil-

borne, who gave to the world that fascinating "romance of pathology"—the discovery of the microörganism of Texas fever? Does he not claim for the American veterinary profession the best federal meat inspection service in the world? And, yet, what has the private practitioner contributed to the elucidation of these mighty problems, beyond his moral support, and his counsel and assistance to those engaged actively in the work? While all this is true, and much more, how many would be willing to drop the routine of their private professional duties and journey a thousand miles or more to a convention where such questions *alone* were discussed? The very large majority of the membership of the A. V. M. A. is, always has been, and always will be composed of men who treat sick and disabled animals; a very large minority is made up of those engaged in teaching veterinary science in State universities, those pursuing experiment station work, veterinarians connected in various capacities with the Bureau of Animal Industry, those of the Army, and those occupying other positions where contagious and sporadic diseases are investigated with a view to their control and prevention. While the majority is much interested in the work of the minority, and *vice versa*, the special find of the one class cannot be totally eliminated from the programme of the meetings of an association to which both belong without destroying the interest and support of the one which has received the slight. The *Journal's* scheme means practically a total loss of the majority. It would, in other words, transform the A. V. M. A. into an experiment station association, with possibly a somewhat less restricted field than that which is occupied by the existing society of that name.

Is that the picture which the editor of the *Journal* would like to see? We know that it is not. We fear that he has not given his usual mature thought to the consequences of such a radical innovation. If the majority of the members wish surgical clinics it is because they believe themselves benefited and enriched by them. They can study the results of the investigations and the discussions upon topics of State medicine in

the quiet of their homes with as much intelligence as though they were present and listened to them; but no amount of descriptive writing can transmit the same knowledge of a surgical procedure that ocular demonstration imparts; one must be upon the scene and behold with his very eyes the methods adopted by men of national reputations, or with special ability, who should, we think, bring to the attention of their less favored brethren classical and new operations, or new or better ways of performing such operations as are of most importance to the practitioner.

As to the omission of papers upon practical subjects, it does seem to us as a sacrilege to suggest such a hazardous experiment, and the day it is promulgated will mark a crisis in the onward march of the national association.

The agitation of this subject can be of little benefit to the A. V. M. A., and the sooner its present policy is emphasized the better for it. We, therefore, hope that the *Journal's* suggestion will be placed in the form of a resolution, so that it can be submitted to a vote, and we will venture the prediction that it will be so forcibly rejected as to effectually settle the question during the present generation.

As to the practicability of section work, which the *Journal* contends has proven a failure, we beg to again differ from our contemporary, and to reiterate that the Association is drifting into it gradually, unconsciously, irresistibly, and practically.

ANOMALOUS VETERINARY LITERATURE.

We have received the first number of a magazine called *The Provincial Veterinary Quarterly*, published at Manchester, England, edited by John Howard, M. R. C. V. S., L. H. A. S. S., etc., and "devoted to the interests of provincial veterinary surgeons and scientists." As a curiosity, it is quite interesting and readable; but as a professional journal, laboring for the advancement of veterinary science, it is disgusting in the extreme. The name of Howard pervades every page, he being the author of the editorials, and the contributor of almost if not every

original article in the twenty-eight large pages which the periodical contains. When he tires of writing the name "John Howard," he varies the monotony by Romanizing himself into "Howardus Johannem," and curtailing it to "H. J., V. S., M. R. C. V. S.," while the only contributions which are not directly credited to him bear *noms de plume* which probably conceal the identity of "John Howard" (such as "Artemus Tertius," "Senius Veterinus," "Agricola," and "V. S. Rusticus.") If the contents were valuable, it has the merit of being absolutely original, but its tone is blackguardish throughout. He denounces the entire composition of the Council of the Royal Veterinary College, and even the veterinary societies become the objects of his blasphemous pen. After a somewhat careful scrutiny of the *Quarterly*, in search of some sane ideas of its energetic editor, we have concluded that John Howard, M. R. C. V. S., L. H. A. S. S., is well described by the last three letters of his second title.

At the recent annual meeting of the Louisiana Medical Society at Shreveport, Dr. Wm. H. Dalrymple, of Baton Rouge, Vice-President of the American Veterinary Medical Association, was one of the two men elected to honorary membership. The recipient of this mark of medical distinction is in every sense worthy of the honor conferred upon him by the representative organization of the medical profession of his State. The South has had little opportunity to know the true worth of the science of veterinary and comparative medicine, as few of the leading members of the profession have taken up their abode in that section of the country, and the marked distinction which has come to Dr. Dalrymple from various sources shows that individual worth is appreciated and respected wherever found.

"THE REVIEW appears regularly and punctually, and its contents are of such a nature that no up-to-date veterinarian can afford to be without it."—(Charles F. Dawson, M. D., D. V. S., Lake City, Fla.)

ORIGINAL ARTICLES.

THE LIVING AND THE DEAD:

REMINISCENCES OF THE VETERINARY PRACTITIONERS OF FORTY
YEARS AGO.

BY ONE OF THEM.*(Continued from page 213).*

R. JENNINGS, V. S.

Little does the author know personally of him. After meeting him at the organization of the United States Veterinary Medical Association at the Astor House, and where he acted as one of the primary functionaries, he was somewhat lost sight of by the profession outside of Philadelphia, where in 1866 with a number of veterinarians from Pennsylvania, they obtained a charter to organize the Pennsylvania College of Veterinary Surgeons, where he occupied the chair of pathology and surgery. Although a self-made man, Jennings was a hard student, and was much interested in the work of the college, which, notwithstanding his efforts and the assistance of his colleagues of the faculty, lasted but a short time. R. Jennings wrote several books for general practical use and principally for farmers; they never were recognized as of any value in a classical point of view. Towards the last years of his life, R. Jennings left Philadelphia and went West to practice.

* * *

A. LARGE, M. D., M. R. C. V. S. L.

Quite young when at the formation of the U. S. V. M. A. he joined those present and signed the constitution at the Astor House, where he arrived with his uncle Curtis. Large, who had a short time before returned to the States—somewhere in 1860—was a graduate of the Royal Veterinary College of London. After his arrival in Brooklyn, he entered the Long Island Medical College, and graduated as an M. D.

He then took charge of his uncle's old practice, but did not like the riding school part of it, although he was himself much in favor of that sport. He was appointed to the New York College of Veterinary Surgeons as professor of theory and practice when Copeman resigned the position, and for several years, up to the closing of the school in 1875, he held the position, and kept it for a few years more at the American Veterinary College.

Dr. Large was a fluent speaker, a thorough physician, master veterinarian, and superior teacher. Rather small in stature, stern features, which would brighten up with force and expression when he delivered his lectures, snapping his contracted lips against each other when engaged in serious discussion, he was as a teacher liked by all of his students. When he was at the Astor House and when he held his professorship, Large idolized the veterinary profession. He was very fond of medical studies, and the many sacrifices and concessions that he made to veterinary practice were known only by his most intimate friends. But in later years, for some unknown reason, after the death of a very dear relative who had cared for him for years when he was younger, he took a great dislike, if not to the profession itself, at least to the connections it imposed on him, and he left Brooklyn for Massachusetts, where in a charming spot of the Berkshire mountains, at Great Barrington, he retired and established himself into consulting human practice.

Dr. Large was one of the first to make out the correct diagnosis of cerebro-spinal meningitis, of which he observed one of the first outbreaks. He wrote several articles on the subject for the *Veterinarian*, of England, and collaborated an appendix to a work of Stonehenge on a few special diseases of America.

On the subject of cerebro-spinal meningitis he had peculiar ideas, and the specimen which he exhibited for many years to his students and friends shows how he was imbued of his peculiarities on the nature of the lesions. The specimen was a portion of the spinal cord, where the meninges were rather in-

jected, and where a small deposit of fat had been left. This by preservation in alcohol had assumed a peculiar aspect and was considered and exhibited as a deposit of plastic lymph.

The laughing side of this is, however, that many, if not all, of those who saw the specimen accepted for a long time the explanation until deeper and more thorough studies of the nature of the disease and of its lesions were better known. Nevertheless, it must be remembered that Large made this error over forty years ago, and that the simple fact of the positive diagnosis of the disease, epizoötic in its character, is more than sufficient to excuse or to pay for the mistake he made in the nature of the lesions.

Large is still alive, the veterinary profession does not interest him any more, but the veterinarians of forty years ago remember him and wish him health and happiness.

* * *

A. LIAUTARD, M. D., V. M.

Of Dr. Liautard there is little to say, or, rather, too much might be written; but he is of our day, and he has been too prominent not to be known of all who live to-day.

That he was one of the first to join the U. S. V. M. A.—in fact, was the first Secretary; that he has acted an important part in the doings of that professional body, and that from the beginning to the last, his work in behalf of the profession has always had for its object the elevation of veterinary medicine—all that is known. He has written much for the association; perhaps too much, as one of his friends used to say. And yet, of all his writings, none created more sensation than the address he sent at the time of the creation of the Society of the Faculties of the Veterinary Schools. Was he wrong? Was he right? But time has proved anyhow that had his advice been taken, errors might have been avoided, and certainly the influence of that organization would have been felt, its work more positive, and the good it might have done placed to its credit.

Of Liautard's life during his stay at the veterinary colleges

with which he has been connected, there are many little stories told which are more or less amusing.

Here are a few :

In 1864 he was engaged to be married, but he was also taken up with a serious work : the improvement of the opportunities for students of the New York College of Veterinary Surgeons. A camel had died at Barnum's large managerie, and the cadaver sent to the Lexington avenue institution. L. had decided to mount the skeleton and to prepare as many of the specimens as he could get for his lectures and for the museum he was bound to collect. To this effect, one day he was in the hospital, engaged in cleaning and washing the entire digestive tract of that camel. For the intestines the work was simple, but for the stomach, with its enormous compartments, he had a hard job. With pants in his boots, coat off, shirt sleeves raised, sweating, covered with stomachal contents from head to foot, he was breaking, shoveling and pushing them away, while his old negro Jack was pouring water as fast as he could to try to soften and wash them away, when a knock at the door of the place where the work was going on was heard. "Come in," said L. The door opened and his intended lady showed herself in the company of a friend. She was passing by and had come to say a few words. The situation was rather peculiar. L. excused himself ; the lady retired ; but for a long time (oh, dear, how long !) he was told that he had a peculiar odor about his clothes and his hands. After this, he was careful not to be seen in his specimen-preparing costume.

There was visiting him often an old retired Englishman, Mr. Epps, queer in his dressing, inquisitive, and many times annoying ; he was sometimes in the way when L. was engaged in his professional work. One day, at one of the clinics which he had established for his students, there came a horse with an enormous abscess of the withers. Filled to the utmost, it was evident that the pus would come out with great force as soon as the abscess would be punctured. The Englishman was there ; he wanted to see the opening made, and pushed himself rather

conspicuously in front of the students, who were also anxious to see the result. L. thought he might give a lesson to the Englishman by having some of the pus go over the visitor's clothes. He took a bistoury and started to make his incision to that effect. But as he plunged it into the top of the withers, the horse made a movement, the incision deviated, and a thick stream of pus came rushing out through the opening and fell . . . all over his own face and covered all his clothes. Afterwards, for himself as well as for others, L. was more careful in emptying soft tumors.

L. was very fatherly with his students, stern, and yet intimate, without allowing familiarity. Severe and friendly, strict to all and demanding of each the exact performance of his duties, he was very much liked and yet feared more or less by all. He was always ready to give advice, an explanation, or anything that a student might need, and more than one has been glad to call on him when the family remittance was late in arriving. While engaged in many occupations, and his time much taken up with practice or other duties, he was a slave to his obligations towards his class, and whether in day time or in the evenings, when due he was there. Dissections at the A. V. C. were carried on in the evenings, and several times a week L. would be at the dissecting room either to demonstrate, guide the students in their work, and on many occasions merely for the pleasure to be with them. One evening it was snowing very hard, the wind blew and it was scarcely weather for any one to be out after supper and a good day of work. Several of the students had been obliged to come back to the College for a quiz, and when this was over, they came down with a rush—some to go away, others to prepare for dissecting. One of them, one of the best of that class, who never neglected his work, was not well disposed that evening, and instead of getting his dissecting gown, called to one of his chums and said: "Oh, come, let us go home; it is horrid weather out and the old man won't come to-night." As he turned back he found himself face to face with L., who said, "No, the old man will not come, he is here."

The poor fellow did not know what to say nor to do, and, ashamed of himself, scooted away, followed by the laughing of all the boys. But he knew the "old man," and he knew that a "queeze" from him would be all the reproach he would give him. He got the "queeze" and was not hurt by it, for he was as good a student as a good fellow—qualities which no doubt he has still.

* * *

ROBERT McCLURE, V. S.

Another self-made man, who was practicing in Philadelphia somewhere in 1860. He became prominent on two occasions: First, in some difficulties which originated shortly after the organization of the U. S. V. M. A., which ended in his expulsion from that body. According to some statements printed, "a general quarrel seems to have taken place and the records of the first meeting were destroyed—the stubs of the first pages which have been cut out are still in the book used by the Association." * The second and more serious event is the condemnation which he received for selling bogus diplomas to veterinary surgeons. He was fined \$2000 and sentenced to nine months imprisonment. It was stated that, after sentence was pronounced, he attempted to poison himself, but was administered a counter-poison and was saved. He was the author of a popular work on diseases of horses. After his condemnation he was lost sight of.

* Dr. R. S. Huidekoper, Sept., 1899.

(To be continued.)

"JUNE REVIEW received and read with interest. I find it full to overflowing of the kind of matter which veterinarians like to read."—(S. Stewart, M. D., V. S., Kansas City, Mo.)

THE old conundrum, how much would it cost to shoe a horse providing the first nail would be charged for at one cent and a doubling up in cost of all the others, was carried out. Assuming that there are seven nails in each shoe, thus making it 28 nails, the total cost for shoeing the horse would be \$1,300,202.24.

HÆMATOZOA AND THEIR MODES OF TRANSMISSION.

BY. PROF. G. NAROTEL.*

If there is in parasitology a question that has made extensive progress in the last years, it is certainly that of the hæmatozoa.

It is not long since that word brought to the mind of most physicians only the idea of paludism ; indeed, the hæmatozoon of Laveran has for a long time remained the only one known by the medical public, and besides the number of those parasites of the blood was relatively limited.

To-day, things have much changed : the number of those which have been observed with certainty in man and domestic animals has raised to no less than eighteen, and a glance at the following list of the names of each parasite and the disease it produces will satisfy any one of the progress accomplished :

A. PROTOZOA.

(1) Sporozoa.

<i>Plasmodium malariae</i>	{ Human malaria, paludism, intermittent fever, paludean fever, etc.
<i>Plasmodium vivax</i>	
<i>Laverania præcox</i>	{ Malaria of birds.
<i>Hæmoproteus Danilewsky</i>	
<i>Piroplasma bigeminum</i>	Bovine Piroplasmosis (Texas fever, Tristeza, mal de brou, etc.)
<i>Piroplasma canis</i>	Canine piroplasmosis (uterus, etc.)
<i>Piroplasma ovis</i>	Ovine piroplasmosis.
<i>Piroplasma equi</i>	Equine piroplasmosis.

(2) Infusoria.

<i>Trypanosoma Evansi</i>	Indian trypanosome (swine).
<i>Trypanosoma Brucii</i>	Nagana (disease of the fly, disease of the Tsetsé).
<i>Trypanosoma equiperdum</i>	Dourine.

B. WORMS.

(1) Trematodes.

<i>Schistosomum hæmatobium</i>	Human schistosomose (bilharziosis of Egypt.
<i>Schistosomum bovis</i>	Bovine schistosomose.

(2) Nematodes.

<i>Strongylus vasorum</i>	Pulmonary strongylose of dogs.
<i>Sclerostomum vulgare</i>	Sclerostomose of horses (vermicular aneurism).

* Translated by A. Liautard from the *Journal de Zootechnie*.

<i>Filaria Bancrofti</i>	Human filariöse.
<i>Filaria immitis</i>	Canine filariöse.
<i>Filaria recondita</i>	Canine filariöse (hæmatozoa of Lewis.)*

Recent researches have therefore considerably increased the numerical importance of hæmatozoa; they have done more, as they have also remarkably increased their pathogenic importance. Some have revolutionized the history of some of the most dangerous of our parasitic diseases, among which we must name paludism, piroplasmoses, trypanosomoses and filarioses.

Let us resume those researches briefly:

(1) PALUDISM.—It was in 1880 that Laveran discovered the hæmatozoon, which carries his name, and that he described its principal forms; as a body spherical, flagellated, in crescent and in rosaceous shape. At first, the discovery passed overlooked until towards 1882, when the parasite was discovered in various parts, especially in Italy, Corsica, England, Germany and Austria. Its existence became more and more accepted, and in 1885 Marchiafava and Celli proposed the name *Plasmodium malarie*.

Since that time observations have been made in numbers, showing in an unquestionable manner its constant presence in *all* individuals affected with paludism and its absolute absence in those who are free from it.

Furthermore, under the impulse given by Golgi, the doctrine of the "plurality of species" was born, generally admitted in our day, in such manner that it is classical actually to describe not one, but three fever parasites:

- (1) *Plasmodium malarie* of the quartan fever;
- (2) *Plasmodium vivax* of the tertian fever;
- (3) *Laverania præcox* of irregular or autumnal fevers.

Since a long time it was asked what could be the mechanism of the infection. Some thought the morbid germ was carried by the air, hence the origin of the word "mal'aria" (bad

* To this list, other less important parasites may be added: Trypanosomes of the camel, of the dog, rabbit, guinea-pig; *Fasciola hepatica*; *Filaria equina*; *Filaria magalhaesi*; Fil. Evansi and many more embryos of helminths which pass through the blood to reach the organs.

air); others rather advocated the hydric or the elluric origin.

A fact, however, had been noticed: the abundance of mosquitoes in malarial countries, and again it was Laveran, who, one of the first, advanced the hypothesis of a possible part played by those insects. Thus the theory of the mosquito received birth. It has just been verified; but, curiously enough, with the hæmatozoæ of birds, in 1898, by Ross and only a few months later by Grassi, with those of malaria.

With the assistance of Bignami and of Bastianelli, Grassi has shown that only the mosquitoes belonging to the family of Culicids and to the Anophiles genus, can serve as intermediate hosts to the germs of malarial endemics. (1)

The proofs in favor of this are numerous to-day:

(1) Malaria has been inoculated with success to individuals living outside the centers of contagion, by being stung by anophiles, intentionally infected. (Experiments made by Patrick Manson upon his own son.)

(2) Day by day, it has been possible to follow the growth of the hæmatozoa in the body of the Anophiles, which had been made to suck palustral blood. (Observations of Grassi, Bignami and Bastianelli.) It is not necessary here to recall these researches purely zoological; let us only say that once in the body of the insect, the parasites give birth to *zygotes* (eggs of botanists) which become encysted in the walls of the stomach and produce an innumerable quantity of small vermicules called *sporozoites*. These are thrown into the lacunar circulation and principally gather in the salivary glands, then in the trunk of the mosquito, which inoculate them with every one of its pricks.

(3) Paludism has been avoided in taking only the single precaution to protect one's self from anophiles. This is shown by the experiments of Sambon and Low, who without the slightest accident were able to pass a whole summer in one of the most unhealthy parts of Roman country with the doors and windows of their house simply closed with metallic screens sufficiently fine to prevent the entrance of the culicids.

Finally, to remove all doubts, Sambon and Grassi in 1900 undertook a series of experiments, which demonstrated in an absolute manner the part of anophiles in spreading fevers. Those were made on the disciplined corps of men working in the companies of railroads, in a region where the disease is so endemic that it is called "la piana di pesto," the pestiferous prairie, and consisted exclusively in protecting from the mosquitoes all individuals living in a given district, while those of the neighborhood localities remaining unprotected served as witnesses.

The protection was obtained in closing all the openings of houses with metallic screens, in carrying from sunset to the morning a hat with a veil covering the face and neck, and in having thick gloves protecting the wrists.

The results were wonderful; out of 113 individuals of the protected zone, not a new case occurred, while in the other the proportion of those who became affected was 49 out of 50. The proof was more than wonderful, and to-day it can be said without fear of errors that two conditions are indispensable for the development of paludism:

(a) That in the country individuals affected with palustral fever be with mosquitoes of the anophiles genus;

(b) That those anophiles which become infected with the blood of malarial patients, have a chance to prick healthy individuals.

Such are the results of recent researches, and this double formula has a capital importance, as it has permitted us to begin upon a rational basis the struggle against malarial endemics.

Indeed, for this to be efficacious three means are indicated:

(a) *Energetic use of quinine in all infected individuals*; the multiplication of the hæmatozoa is thus prevented, the infection of the anophiles become impossible.

(b) *Destruction of the mosquitoes*, by suppression of stagnant waters. The growth of those insects demands the presence of still waters; females lay their eggs, which give birth to larvæ, then to nymphes, both aquatic, and finally to perfect

insects flying in the air ; therefore it may be said that where there is no stagnant water there are no mosquitoes, and therefore no malaria. The suppression of stagnant waters is often possible by drainage and drying, removal of useless reservoirs, of ponds or lakes, and when it is not possible, the destruction of the larvæ can be obtained in keeping fishes in the waters, or better, by the American process, the *petrolization*, which consists in pouring petroleum over the surface of the water ; this spreads in a thin layer and forms a covering which prevents the larvæ and the lymphes from breathing ; they die by asphyxia.

(c) *Protection of people against the pricks of the insects.*—The experiments of Grassi, Sambon and Low show that malarial fevers could be avoided in not letting infected anophiles bite healthy people, and healthy anophiles to come and infect themselves in pricking diseased individuals.

This protection can be obtained easily. Culicids are night insects, which fly in myriads at sunset and rest during the day ; therefore, all that is necessary is to protect one during the night as follows :

(1) Not to allow the anophiles to enter houses by the use of fine metallic screens ; avoid light in the bedrooms.

(2) Use mosquito netting.

(3) Wash the face and hands with substances that chase the insects ; for instance, a maceration of quassia amara, which leaves on the skin a disagreeable taste.

(4) Individuals who have to be out at night shall carry a veil around the head, and closed tightly under the clothes round the neck ; use thick gloves and have lower parts of the legs of the pants tight, with lace or protected with leather gaiters. Wherever these have been seriously tried the disease has disappeared. The knowledge of the part played by mosquitos in the spreading of endemics of paludism shows its importance in the progress made since three years in its prophylaxy.

II. PIROPLASMOSES.—Hæmatozoa of malaria do not seem to exist in our domestic animals ; they are replaced by forms

very close to them, "the piroplasmas." The most known are those which produce an affection observed for the first time in Roumania, under the name of "bacterian hæmoglobinuria" of cattle (1888). It has been observed in various regions: in the United States (Texas fever, 1889), in Finland (hæmoglobinuria of Finland, 1894), in Sardinia (hæmaturia of Sardinia, 1895), in Italy (bovine malaria, 1897), in Australia, Transvaal, Turkey, Argentine Republic and Uruguay (tristeza), etc., etc.

Professor Mathis, in 1896, showed that the disease is also found in France, where it is ordinarily called "Mal de Brou." Its area of dispersion is therefore very large.

It is to Smith and Kilborne that comes the honor to have, in 1889, brought out the evidence in the blood of animals affected with Texas fever of an intraglobular parasite, partly seen the year before by Babes and that with right they did consider as the agent of the disease; they named it *pirosoma bigeminum*, but later the name of the genus was left off and that of *Piroplasma* substituted for it.

The same authors have shown also that, like human malaria, the inoculation of bovine malaria was made by blood-sucker animals, the ixodes or ticks.

Such was our knowledge upon bovine piroplasmose when Lignières in 1900 took up the study of the question and advanced it. Having succeeded in cultivating the parasite *in vitro*, in the serum of diseased animals, he succeeded in reducing sufficiently its virulency to transform it into a vaccine. It is the first example of culture and of attenuation of an endoglobular, hæmatozoa, and for this Prof. Lignières received a prize from the Academy of Medicine in Paris.

The explanation given by Lignières of the immunity granted by a first attack of bovine malaria is very curious; it may be called "the theory of the *latent parasitism* and of the *successive immunities*."

For Lignières, the *Piroplasma* does not act only in a mechanical way, by its presence in the middle of the globules; it also secretes a toxic product, more or less analogous to micro-

bian toxines, which has for effect to reduce the resistance of the hæmatics to the entrance of the parasites.

But at the end the cells of the blood become accustomed to this product, in such a way that little by little, this resistance, for one instant reduced, reacts; an instant arrives where the hæmatozoa can no longer grow, because they only find elements accustomed to the toxic product and remain in the condition of spores in the plasma of the blood; from this instant, immunity is created.

Unfortunately, the toxines that are poured into the blood are eliminated little by little, and a day arrives when their quantity is too weak for the globules recently formed to get accustomed to them. Those globules remain thus infectable and are invaded by the spores which have remained in a *latent state* in the plasma. A relapse takes place, during which there is secretion of another dose of toxic product, which reinforces the globular accustomancy and renews the immunity.

Thus the total refractory state is the result of *successive immunities*, developing thanks to the *latent parasitism* of the piroplasmas.

Another result of those recent researches has been to show that piroplasmas are not observed in cattle. They have also been found in dogs, first in Italy, to the Senegal, then in France, where Nocard and Almy have clearly proved that in several cases, hæmoglobinuria and jaundice were of piroplasmic origin.

They have also been seen with sheep in Italy and in Roumania, and it is probable that the cases of hæmoglobinuria described by Leblanc and Savigni belong to that disease. Finally, they were observed in 1898 by Bordet and Danysz with horses in South Africa.

It is also likely that the observations of equine paludism, such as those of Pierre and of Dupuy, correspond in reality to the piroplasmoses or perhaps also to the trypanosomoses. Indeed, the horse does not seem susceptible to human malaria.

III. TRYPANOSOMES.—Grüby described the first trypano-

some, in 1843. It was then a living protozoa, parasite of the plasma of the blood of frogs, and since that time similar animalcules have been found in many vertebrates. But, notwithstanding their number, only little attention was paid to them, as none seemed to give rise to morbid troubles. It was only in 1880 that the idea of a trypanosome being pathogenic was entertained; it came from the observation of Dr. Evans, who at that time showed that one of the most severe anæmias of equines in India (Surra) was a function of a trypanosome (*Trypanosoma Evansi*).

Then, in succession, the same demonstration was made, in 1895, by Bruce with Nagana of South African bovines; in 1899, by Schneider and Buffard with dourine, and, finally, recently by Elmassian, with the "Mal de Caderas" in South American horses. Man seems to be entirely refractory to nagana; yet, Dr. Dutton has observed at Bathurst (Gambia) trypanosomes in the blood of a European, suffering with remittent fever, puffy face, œdema of the eyelids and of the lower extremities, while malaria could not be accused as the cause.

Then there is actually four trypanosomes, known and acting in the various parts of the globe.

The infusorias which produce them are very much like each other, and their analogies in aspect are such that it has been a question whether there were not but one parasite.

Koch, Nocard and Rogers think that surra and nagana are identical. They are indeed two diseases which attack the same species (horses, donkeys, cattle, camels, goats, sheep, pigs and dogs) and which present about the same symptoms: remittent fever, œdema of the genital organs and of the extremities, progressive anæmia, muscular debility, paresis of the hind quarters.

The "Mal de Caderas" is probably surra. On the contrary, dourine seems well a special affection; it proceeds more slowly, with specific symptoms, and, besides, its trypanosome differs a little from that of nagana. Another proof of its specificity has been furnished by Nocard. He has shown that dogs thoroughly immunized against dourine do not resist

the inoculation of nagana; the agents of the two affections are certainly different species.

At any rate, there exists deep differences in their mode of transmission; surra and nagana are inoculated by dipterous insects; the fly tsetse (*Glossina morsitans*) for the first, the tropical horsefly (*Tabanus tropicus*) for the second.

In Abyssinia, Brumpt has observed that trypanosomas were inoculated to camels by a fly resembling the *Glossina morsitans*.

Flies, therefore, after sucking the blood of diseased animals, inoculate sound animals with the pathogenous trypanosomas; it is different with dourine, which is transmitted only by the act of coitus.

A still more interesting point to notice in the history of the trypanosomas, relates to the researches made by Laveran and Mesnil on the trypanosoma of rats (*Trypanosoma Lewisi*).

They have demonstrated that patients recovered from a first infection are refractory to a second and enjoy immunity; the parasites which are injected in their peritoneum are, in less than an hour, surrounded and digested by leucocytes.

They have also shown that the serum of those immunized animals possesses also a passive immunity whose mechanism is analogous to that of active immunity; both resulting from stimulation of the phagocytes and consequently being of a cellular and not humoral order.

Those researches are of the highest importance, as they permit us to foresee the possibility of vaccinating animals against trypanosomas; on that account they are similar to those of Lignières with the piroplasmoses.

IV. FILARIOSIS.—It is about twenty years since Mauson mentioned the mosquito as being the agent of transmission of one of the filaria of man (*Filaria Bancrofti*). This worm, which when adult lives in the lymphatic vessels of the skin, stops the course of the lymph, thus giving rise to the formation of lymphatic varices, to the irritation of the vessels and the surrounding connective tissue, and at last to elephantiasis and chyluria. Embryos pass into the blood, but they are found in

the peripheral circulation only at night or rather during sleep, hence their name of *Filaria nocturna*.

This fact brought Manson to think that the agent of transmission might be a sanguinolent insect, having nocturnal habits—perhaps it was mosquitoes.

This supposition, which was proved true in 1878, has received lately a complete and brilliant confirmation by the works of Manson and Low, associated to those of Bancroft.

They have shown that, if a mosquito pricks an individual affected with filariosis, the embryos sucked in with the blood pass into the stomach of the diptera, then through its walls to reach the mass of its thoracic muscles, where after two or three weeks they are transformed into larvæ.

Those then travel to the head, collect in the pharyngeal cavity and one by one penetrate into the trunk of the mosquito; it is in that way that by every one of his pricks the insect inoculates one larva, in the same way that he inoculates the plasmodium of malaria. But different from malaria, the forms susceptible of carrying the germs of filariosis are not only anophiles; they are the mosquitoes, and principally the vulgar one (*Culex pipiens-culex ciliaris*).

The case of filarioses of man is not unique. That of dog (*Filaria immitis*) is also transmitted in the same way, as was demonstrated in Italy by Grassi and Noé. Having dogs suffering with filariosis pricked by *Anopheles*, the two naturalists have first seen the embryos transformed into larvæ in the body of the insect. Then in a room well closed, where a healthy dog was, immobilized and gagged, they left several hundreds of infected anophiles free in the room; five months later, this dog had in its peripheral circulation embryos of filaria.

Here, also, the inoculation can be made with the *Culex* as well as with the *Anopheles*.

Those facts are of the highest interest, as they open new horizons upon the mode of propagation of the other filarias, whether they live as parasites of man (*Filaria Magalhæsi*, *Fil.*

Ozzardi, *Fil. diurna*, *Fil. Demarquayi*, *Fil. perstans*, etc.), or are gathered from animals.

It is a long time since, for the first time, I heard professor Railliel express the supposition that the peritoneal filaria of horses (*Filaria equina*), now probably transmitted by the pricks of insect-suckers. The same supposition can evidently be made for others, specially *Filaria labialo-papillosa* of cattle, *Fil. hæmorrhagica* and *Fil. reticulata* of horses. It is certainly in that direction that researches must be made.

Such are, rapidly considered, the principal discoveries relating hæmatozoa. Until comparatively recently mosquitoes have been considered only as annoying and disagreeable insects; now we find them pathogenous and carriers of several parasitic diseases of great severity.

Besides, there is no doubt that they inoculate other infections. It has already been demonstrated with yellow fever, carried to Cuba by the *Culex fasciatus*; the same will probably be demonstrated soon for horse-sickness of South Africa and for lepra. If one thinks how numerous mosquitoes are he can appreciate the danger that threatens us and the necessity of destroying them.

OLDEST HORSE IN AMERICA.—What is probably the oldest horse in America is owned by Major Robert Mass, of Louisville, Ky., who has papers proving its age to be over 47 years. He is named Ivanhoe, and is a large bay, with a blaze face, and up to a year ago of a very docile disposition; of late, however, he has grown irritable, and almost vicious towards strangers; to his master and the children he is the same as ever. He bears on his right flank the scar of a gunshot wound received at the battle of Buena Vista, in the Mexican campaign, where he was ridden by the grandfather of the major. He was also used as a charger in the civil war, and three separate times when his rider was unhorsed found his way home to his pasture.—(*Horse-Shoers' Journal*.)

"I FIND THE REVIEW INDISPENSABLE. I look for it anxiously monthly as my best professional friend."—(*T. S. Childs, V. S., Saratoga Springs, N. Y.*)

A STUDY OF THE MORPHOLOGY OF THE BLOOD OF THE HORSE.*

BY SAMUEL HOWARD BURNETT, A. B., M. S.

In human medicine the examination of the blood has passed beyond the experimental stage and taken its place as a valuable aid to the practitioner. In certain few diseases, such as malaria, leukæmia, and filariasis it gives full information for a diagnosis; in very many affections, such as the anæmias, pneumonia, typhoid fever, diabetes, malignant tumors, and suppurative processes, it is of valuable assistance; and in many other cases the negative data revealed by a blood examination aids materially in distinguishing diseases otherwise closely resembling each other, such as Hodgkin's disease and leukæmia.

In veterinary medicine but little if any use of blood examination has been made except in the diseases caused by hæmatozoa, as Surra, Texas or Southern Cattle Fever, filariasis, and the like. It would seem that in the domesticated animals a blood examination would be of even greater value than it is in man, because of our dependence wholly upon objective symptoms. Speaking of the value of blood examination Cabot † says, "Like all methods of physical examination it has especial usefulness when we cannot communicate with a patient."

A search through veterinary literature shows that very little work has been reported concerning the morphology or the clinical value of the examination of the blood of the horse. That the need of a more thorough knowledge of the structure of the blood in both health and disease is a real one has been well shown in numerous obscure cases in the clinic and in certain investigations undertaken at this College.

The objects of this investigation were to determine the structure and the condition of the blood (1) of the healthy horse and (2) that of horses suffering from various disorders that were

* Thesis presented to the faculty of the New York State Veterinary College for the degree of Doctor of Veterinary Medicine, 1902.

† Cabot—Clinical Examination of the Blood. Third Edition, 1898.

brought to the College clinic. As yet but a beginning has been made, although the results are of sufficient interest to offer in the hope that they may be of some assistance to those seeking help from hæmatology.*

METHOD OF PROCURING BLOOD FOR EXAMINATION.

If the blood is desired only for an examination in the fresh condition, or for making films, it may be obtained most readily by a puncture from the inside of the lower lip near the commissure. When more blood is needed as when a count of red or white corpuscles or an estimate of hæmoglobin is to be made, a larger incision and consequently another site are necessary. For this purpose I have made the incision on the croup or on the middle of the side of the neck. The croup has the advantage of having a more nearly horizontal surface whereas the blood flows away more easily from the neck. However, I have selected the neck, as a rule, as the skin is thinner and seems to be more vascular.

The preparation of the skin is simple. Where the lip is selected, all that is necessary is to wash the site with water and dry with a clean towel. Where the neck or croup is selected, the part should be disinfected. As the blood does not come in contact with the epidermis, but must be taken from the incision, it has been found that it is not necessary to shave off the hair. This is fortunate, as the shaving produces a slight blemish that is often objectionable to the owner. All that is needful is to wet and part the hair, wash the skin where exposed in the parting, and apply a disinfectant; (five per cent. carbolic acid.)

* For the technic and methods of examination the reader is referred to the following standard works on hæmatology :—

Ewing—Clinical Pathology of the Blood. 1901. Lea Brothers & Co., Philadelphia and New York.

Full bibliographies of the various parts of the subject are given in this work.

Cabot—Clinical Examination of the Blood. Third Edition. 1898. Wm. Wood & Co., New York.

Coles—The Diseases of the Blood. 1898. J. & A. Churchill, London.

DaCosta—Clinical Hæmatology. 1901. P. Blakinston's Son & Co., Philadelphia,

If the instrument is sharp the animal will scarcely notice the puncture or incision. Where blood is taken from the lip, puncture is made with a blood lancet having a broad blade. I have used an automatic lancet with a blade about two millimeters broad. A narrow one does not yield sufficient blood. On the neck or croup a spring fleam was used having a rather wide blade. The depth of the incision, which should be well through the skin, is regulated by a set screw. An ordinary fleam will answer, and is to be preferred to a scalpel or lance.

The wound from the fleam heals readily. After sufficient blood has been obtained, the edges of the wound are held together for a few seconds until they adhere. On the following day it requires careful search to find the scar.

During cold weather some trouble may be experienced in getting sufficient blood. Smith* has called attention to this fact. He said it was impossible to make satisfactory preparations with a temperature below 50° F. With a temperature somewhat above 50° F. the peripheral vessels are generally contracted. I have found it to be of advantage to stimulate the peripheral circulation by holding a hot cloth on the skin or by gentle friction of the part before making the incision. By warming the skin and by having pipette, slides and cover glasses warm I have made successful examinations with the temperature at 47° F. Rapidity is essential to success as the blood soon changes in contact with the air and the flow of blood soon ceases. For examination in the fresh condition I used a platinum wire with a loop large enough so that the contained drop spread without pressure under the entire cover glass. It was generally impossible to touch the center of the cover glass to the drop of blood except when the puncture was made on the lip. The red corpuscles were counted by Thoma's apparatus, using Toisson's diluting fluid, in every case counting the corpuscles in at least one hundred squares on each of two slides.

* Investigation into the Nature, Causation, and Prevention of Texas or Southern Cattle Fever. Bureau of Animal Industry, Bul. No. 1, 1893.

In getting an estimate of the hæmoglobin both Gower's and Oliver's hæmoglobinometers were used. Oliver's is more accurate and has the added advantage of requiring a smaller amount of blood.

The specific gravity was obtained by adding a drop of blood to a mixture of chloroform and benzene of about the same density as blood, then adding either benzene or chloroform till the drop is of the same density as the drop of blood. This is indicated by the drop neither sinking nor rising in the mixture. Then the specific gravity of the mixture is taken by means of a urinometer in the same manner as for urine.

The number of leucocytes was obtained by using the special pipette in the counting apparatus for leucocytes. The entire ruled space of two slides, eight hundred squares, was examined. There is an advantage in routine examinations in using a single pipette for both red and white corpuscles, as it requires less blood and shortens the time for collecting. In making differential counts of the leucocytes at least five hundred corpuscles were examined, but usually a larger number.

Films were spread on slides in the manner recommended by Ewing.* The edge of the slide was touched to the surface of the blood then it was applied to the surface of another slide at an angle of about 45° and drawn slowly with uniform pressure giving a thin film. This method is much preferable to that of spreading on cover glasses, and infinitely more so than the older method of Ehrlich, that of letting the blood spread between two covers and then drawing them apart. The dried films were fixed by heat, by ether and absolute alcohol, equal parts, or by Wright's Method.†

When heat was used the films were placed in an oven and kept for twenty minutes at a temperature of 120° C., then allowed to cool gradually. A more rapid means, but less uniform in its results, is to fix over a direct flame for about two minutes

* Clinical Pathology of the Blood. 1901, p. 47.

† Wright—A Rapid Method for the Differential Staining of Blood Films and Malarial Parasites. *Journal of Med. Research.* Vol. VII, No. 1. Jan. 1902, p. 138.

(Ewing loc. cit. p. 48.) passing the slide or cover, film side up, through the flame.

With ether and alcohol, the fixation is complete in half an hour. Several, about twelve, hours fixation is preferable if Ehrlich's triacid stain is to be used. The reagent should be kept in a glass stoppered bottle and even then needs to be renewed rather frequently. Absorption of water is indicated by vacuolization of the red corpuscles.

Wright's * method is the most rapid and convenient as fixation and staining are done simultaneously. The dried film is flooded with the stain for about one minute, then distilled water is added drop by drop until a metallic film appears on the surface and the liquid becomes semi-translucent. This is allowed to act two or three minutes then the slide is washed in distilled water until the red corpuscles have an orange or pink color. The excess of water is then absorbed with filter paper and the preparation allowed to dry in the air. It is then mounted in neutral Canada balsam.

For clinical work Wright's method is to be preferred on account of its rapidity and its differential staining of the different elements of the corpuscles. Basophile, eosinophile, and neutrophile granules are clearly differentiated and readily distinguished. The method of staining is given above.

Eosin and methylene blue give excellent results. With it all the normal leucocytes are readily distinguished. The films are stained a few seconds with a saturated alcoholic solution of Ehrlich's blood eosin, rinsed in water, and then stained for about a minute with a saturated aqueous solution of methylene blue (Grübler), and again washed hurriedly in distilled water,

* It is prepared as follows: (After Wright) A one percent. solution of Methylene blue (Grübler) is made in a one half percent. solution of sodium bicarbonate and steamed for a full hour. The solution is cooled and to it is added gradually with constant stirring a one-tenth percent. solution of eosin (Grübler, yellow, water soluble) until a yellowish metallic scum appears on the surface and a fine granular black precipitate appears. This takes about 500 c. c. of eosin solution to 100 c. c. of methylene blue solution. The precipitate is collected on a filter and allowed to dry thoroughly. A saturated solution is then made in pure methyl alcohol. 100 c. c. of the methyl alcohol will be sufficiently saturated by .3 gram of the precipitate in a few minutes. This saturated solution is then filtered and one-fourth of its volume of methyl alcohol is added to the filtrate. This is the fixing and staining fluid.

the water remaining on the slide being absorbed by filter paper. The films are allowed to dry in the air and are then mounted in neutral Canada balsam.

Ehrlich's triacid stain* gives uniform results but is not satisfactory except for neutrophile granules.

Heat is preferable to other methods of fixation for this stain. If ether and alcohol is used the time of fixation should be several hours, otherwise the red corpuscles will be so deeply stained of a purplish color that the leucocytes will not be so readily distinguished.

MORPHOLOGY.

Red Corpuscles (Erythrocytes).—In the fresh condition red corpuscles are of a yellowish color with a small nearly translucent area in the center, the dells. Many of the corpuscles that adhere to the glass appear to be uniform throughout, the clear central area being lost. The red corpuscles vary greatly in size. In fresh blood the average diameter of those measured was between 5.8μ and 5.9μ the extreme being 3.8μ and 7.8μ . Sussdorf† gives the normal size for the horse as 5.8μ . In films fixed by ether and alcohol, the red corpuscles are slightly smaller, the average diameter being 5.76μ , the extremes being 4.5μ and 9.0μ . With heat fixation the size is still smaller, being between 4.3μ and 6.8μ , the average 5.55μ . Fixed by osmic acid or Flemming's fluid the corpuscles had an average diameter of 4.8μ .

Leucocytes.—Five varieties of leucocytes were observed in the circulating blood, namely—lymphocytes, large mononuclear, polynuclear, eosinophile, and mast cells. The diameter of leucocytes depends upon the method of preparation. They are

* Formula :

Sat. aq. sol. Orange G.....	120 to 135 cc.
“ “ “ Acid Fuchsin	80 to 165 cc.
“ “ “ Methyl. green	125 cc.
To these add Aqua.....	300 cc.
“ “ “ Absolute alcohol	200 cc.
“ “ “ Glycerin	100 cc.

† Ellenberger, Handbuch der vergleichende Physiologie der Haussaugethiere. 1890, p. 180.

larger in smears than in fresh blood, and larger in thinly spread than in thick films, so that much value cannot be placed on measurements. In films the lymphocytes were found to be from 4.6μ to 11.0μ in diameter, the average size being slightly larger than that of red corpuscles. Large mononuclear leucocytes were found from 9.0μ to 15.2μ in diameter, the average being about 11μ . Polynuclear leucocytes were found from 8.1μ to 16.4μ , the average being 12μ . Eosinophiles were found from 8.6μ to 15.2μ the average diameter being about the same as for polynuclear. Only a small number, about twenty, mast cells were measured. The average diameter was 15.3μ the extremes being 11.6μ and 17.6μ .

Lymphocytes and large mononuclear leucocytes when unstained do not show distinct granules. Fine granules serve to distinguish the polynuclear and large refractive granules the eosinophiles. The nucleus is compact and somewhat refractive in lymphocytes, vesicular in the large mononuclear, compact and variously lobed, twisted, bent, or coiled in polynuclear and eosinophiles. The addition of one-third per cent. acetic acid

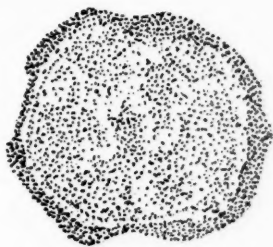


FIG. 1.

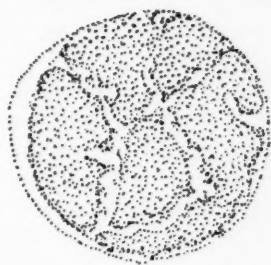


FIG. 2.

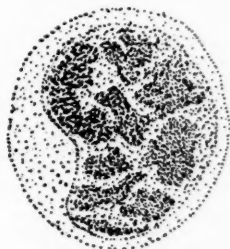


FIG. 3.



FIG. 4.

brings out the nuclei clearly. Polynuclear and eosinophile leucocytes possess active amœboid movements.

Lymphocytes in films stained with Ehrlich's triacid stain have a well-stained coarsely reticular nucleus of a bluish green color. It occupies nearly all of the cell, only a narrow rim of cytoplasm extending around it. The outline of the nucleus is generally circular, but is found incurved or with a notch or deep sinus in one side. The cytoplasm has a purplish tint. Sometimes there is a narrow unstained zone about the nucleus.

With eosin and methylene blue (Figs. 1-4) the nucleus and cytoplasm are stained blue with a more deeply stained reticulum. Generally the nucleus is more deeply stained, but is often less deeply stained than the cytoplasm.

With Wright's method the nucleus is a purplish color with more deeply stained reticulum. The cytoplasm is a greenish blue; it may be a pale pink, depending on the extent of the differentiation. The nodal thickenings of the reticulum are greenish, sometimes pale, sometimes deeply stained.

It is impossible to draw a sharp dividing line between the lymphocytes and the large mononuclear leucocytes, as every grade of transition may be found between the two type forms. I have included in the large mononuclear the forms having a vesicular oval or curved nucleus that occupies one-half or two-thirds of the cell and is commonly situated at one side of the cell.

With Ehrlich's stain the nucleus is pale bluish green and



FIG. 5.



FIG. 6

the cytoplasm has a purplish tint. Both nucleus and cytoplasm are more finely reticular than in the lymphocytes.

With eosin and methylene blue the nucleus (Figs. 5 and 6) is not so deep a blue as in the lymphocytes. It may have several deeply stained areas that resemble nucleoli. The cytoplasm is of a pale blue color.

With Wright's method the nucleus is purplish with deeper stained reticulum. The cytoplasm is of a greenish blue color. Both nucleus and cytoplasm are less deeply stained than in the lymphocytes.

Polynuclear leucocytes with Ehrlich's triacid stain have the nucleus stained a pale bluish green tint. The form of the nucleus varies greatly, those most commonly seen being elongated, twisted, spirally coiled, S shaped, or U shaped. The cytoplasm has a purplish or pinkish tinge and contains many fine, deeply stained, purplish granules.

With eosin and methylene blue the nucleus (Fig. 7) is

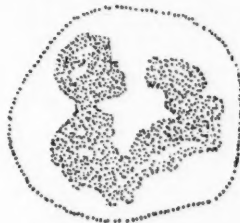


FIG. 7.

sharply stained with methylene blue and is coarsely reticular, while the protoplasm is faintly stained with eosin. Sometimes the protoplasm has a faintly bluish tint. Granules are not apparent except occasionally in preparations overstained with eosin, when they may be of a bright pinkish tint.

With Wright's stain the coarsely reticular nucleus (Fig. 8) is sharply stained purplish, while the cell body is of a pinkish color. The granules are of a bright reddish violet color.

Eosinophiles are about the most conspicuous of the leucocytes whether stained or unstained. When unstained the granules are refractive and have a greenish white tint. The

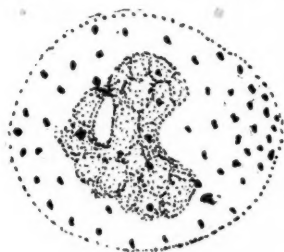


FIG. 8.

size and shape of the granules varies widely. They are ordinarily 1μ to 1.5μ in long diameter. Their outline is round, oval, ovate, or oblong. In the living cell undergoing amœboid movement the shape of the granules may be seen to change. The number of granules in a cell is usually from 10 to 40.

Stained with Ehrlich's triacid stain the nucleus is pale greenish. The most common shape is bi-lobed. The granules are copper colored.

With eosin and methylene blue the nucleus (Fig. 9) is

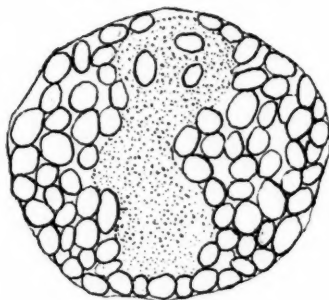


FIG. 9.

blue, coarsely reticular, resembling the nucleus of the polynuclear leucocyte, though not so deeply stained.

With Wright's method the nucleus is purplish, resembling in general that of a polynuclear leucocyte. The granules are of a rosy red tint.

Mast cells with Ehrlich's triacid stain are difficult to distinguish as the granules are not stained. The nucleus is usually bi-lobed with a thick connecting part; but is sometimes shaped somewhat like that of a transitional leucocyte.

With eosin and methylene blue the nucleus is pale blue, often showing a deeper stained coarse reticulum.

The granules are of different sizes, from minute dots to round, oval, or circular granules slightly smaller than the average eosinophile granule. They are of a deep blue color.

With Wright's method the nucleus (Fig. 10) is pale blue,

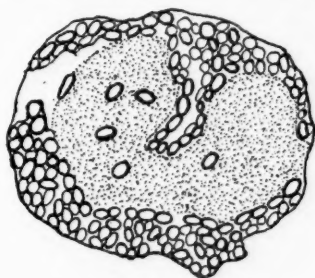


FIG. 10

the cytoplasm a faint pink, while the granules are stained a deep purplish color.

The following table gives the results of the examination of the blood of eleven horses.

TABLE I.—EXAMINATION OF THE BLOOD OF ELEVEN HORSES.

Horse No.	Age	Sex	Red Corpuscles per c. mm.	Leucocytes per c. mm.	Percentage of hemoglobin	State of health from clinic records.
1	14	m	5575000	6650	58	Asthma.
2	13	f	4400000	5000	61	In poor condition.
3	12	m	5750000	18800	61	Fistulous Withers.
5	12	f	6600000	12850	73	Spavin and Ringbone.
6	13	f	7168000	7814	63	Spavin.
7	14	m	7900000	6562	71	Chronic Spinal Affection.
8	7	f	4880000	19500	59	Edema in one hind leg. Lymphangitis?
9	13	m	7060000	9958	61	Quittor.
11	10	f	7900000	12166	68	Fistulous Withers. Pregnant.
13	4	m	5270000	5250	45	Helminthiasis?
15	5	m	6700000	16900	68	Suppurating wound on foot.

EXAMINATION OF CASES.

Blood examinations were made from comparatively few cases. Of these animals the majority were suffering from some disorder; two (Nos. 1 and 2) were purchased for anatomical dissection. None of these were normal animals.

Although the examinations were too few to warrant making generalizations from them, yet a study of the above table gives a hint as to what may be expected to be found in the blood of horses, and also gives interesting data concerning certain affections. Attention will be drawn to these later.

The red corpuscles in thirteen subjects was found to be between 4,410,000 and 8,980,000 per cubic millimeter. Sussdorf, *loc. cit.*, gives the normal number for the horse as 6,500,000 to 8,000,000, the average being 7,212,500. Cadeac* gives the normal as 5,000,000 to 6,000,000. In the above table it will be noticed that when the red blood corpuscles are below 6,000,000 the subjects were in poor condition.

The leucocytes vary from 5,050 to 19,500 per cubic millimeter. The larger number was found in a horse in which the circulation seemed to be sluggish. It was probably a case of lymphangitis. The others, with about 10,000 or more leucocytes, occurred in subjects in which active inflammation was taking place. In three cases, Nos. 3, 11, and 15, there was chronic suppuration with discharge. No. 5 was affected with a constitutional disease of the bones, ring bone and spavin.

The percentage of hæmoglobin was found to vary from 45 to 73. A percentage of 91 was found in one case in which unfortunately a count of red corpuscles was not made. The average is one per cent. of hæmoglobin for about 100,000 corpuscles. This is a slightly greater percentage than would be if the corpuscles were of the same shape and contained relatively the same amount of hæmoglobin as human red corpuscles, considering the diameter of the equine corpuscle as 5.8μ and that of the human as 7.5μ and the number per cubic millimeter as respectively 7,200,000 and 5,000,000.

* Cadeac-Semiologie-Diagnostic et Traitement, 1894, p. 333.

The specific gravity was taken in only two cases, No. 11 and 15, where it was 1054 and 1050 respectively. Sussdorf, *loc. cit.*, gives the normal for the horse as 1060.

The following table gives an analysis of the leucocytes found in the different horses:

TABLE II.—AN ANALYSIS OF THE LEUCOCYTES IN THE DIFFERENT CASES WITH THE PERCENTAGE AND NUMBER PER CUBIC MILLIMETER OF EACH VARIETY

Horse No.	Leucocytes per c. mm.	Lymphocytes.	Large Mononuclear	Polynuclear.	Eosinophile.	Mast Cells.
1	6650	21.96% 1460	3.13% 208	73.92% 4914	0.98% 65	
2 Dec. 16	5000	29% 1450	5.45% 272	63% 3150	2.4% 120	
2 Jan. 2	7100	19.2% 1363	4% 282	72.4% 5140	4.4% 312	
3 Feb. 7	20333	19.4% 3944	2.1% 426	75.9% 15432	2.5% 508	0.1% 20
3 Feb. 26	16277	36.75% 5981	3.75% 610	55.25% 8993	3% 488	1.25% 203
5 March 13	11500	18.54% 2132	4.67% 537	75.32% 8661	1.45% 166	
5 March 25	14200	35.2% 4998	1.6% 277	59.4% 8434	3.8% 539	
6	7814	24% 1875	2.2% 172	71.4% 5579	1.2% 93	1.2% 93
7	6562	8.25% 541	2.12% 139	87.62% 5749	1.87% 122	0.12% 7
8	19500	49.16% 9586	4.33% 844	40.83% 7961	4.83% 941	0.83% 161
9	9958	16.71% 1662	4.84% 482	69.06% 6876	8.59% 855	0.78% 77
11	12166	11.8% 1435	4.38% 532	83.57% 10167	0.09% 11	0.14% 17
13	5250	31.33% 1645	5.66% 297	59.33% 3114	1.66% 87	2% 105
15	16900	44.53% 7525	6.06% 1024	44.06% 7746	4.8% 811	0.53% 92

The percentages of the several kinds of leucocytes in the above table are based on counts of three hundred corpuscles for No. 13 and of 500 to 2100 for each of the others.

The lymphocytes were found to vary widely. The smallest number found was 541 per cubic millimeter, which was eight and one fourth per cent. of the leucocytes. The largest number 9,586 per cubic millimeter, which was 49.16 per cent. of the leucocytes, was found in a horse, No. 8, which was affected with lymphangitis. It will be noted that in No. 5 examinations made twelve days apart show a marked change in the lymphocytes. During this time the lymphocytes had increased from 2132 per cu. mm. to 4998 while there had been a decrease in the number of polynuclear leucocytes.

In the other cases where there were 2,000 or more lymphocytes there was chronic inflammation with suppuration.

The large mononuclear leucocytes varied from 139 to 1024 per cu. mm. The large lymphocytes with deeply stained cytoplasm were not classed with the large mononuclear leucocytes.

The polynuclear leucocytes varied from 3,114 to 15,432 per cu. mm. The higher numbers occurred in cases of chronic inflammation. In Nos. 9 and 15 which were cases of chronic inflammation with suppuration, quittor and suppurating wound in the foot, there is not so marked an increase in the polynuclear leucocytes. These latter cases also have a very large number of eosinophiles.

The number of eosinophiles was found to vary from 11 to 941 per cu. mm.

No mast cells were found in the blood of Nos. 1 and 5. None are reported for No. 2 in the table, but they were found in examinations made at other times than those reported. Their absence is doubtless due to not enough leucocytes having been examined. In No. 3 but one mast cell was found among a thousand leucocytes examined. The largest number of mast cells found was 203 per cu. mm. which was one and one-fourth per cent. of the total number of leucocytes. The highest per-

centage found was in number 13, a supposed case of Helminthiasis.

Though the data given above are not conclusive yet they agree with what has been observed in man and in experimental animals. There is a polynuclear leucocytosis in active inflammations. When the lymphoid tissue is involved there is a lymphocytosis. It would seem therefore, that an examination of the blood would give valuable aid to the practitioner in making a diagnosis in cases of inflammation too deeply seated for detection by ordinary physical examination. The diseases affecting the bones and the parasitisms seem to produce marked changes in the blood. It would be premature to state just how much may be obtained from a blood examination. There is need of more work being done in this line of investigation. Blood coming in contact as it does with all the tissues of the body may be expected to give evidence of the deeply seated changes that are taking place. It is impossible, as a rule, to study the tissues during the life of the patient and to discover just what pathological changes are taking place. The blood, however, is always available for examination and offers a readily accessible means for detecting the existence of disease processes.

In conclusion, I desire to acknowledge my indebtedness to Dr. V. A. Moore for advice and assistance freely given in making these examinations and to Drs. Law and W. L. Williams for the use of subjects in the College clinic.

MANGE IN CATTLE AND HORSES.—The Nebraska Experiment Station has just issued Bulletin No. 74, on "Mange in Cattle and Horses, and Lice on Hogs," prepared by Station Veterinarian A. T. Peters. The bulletin contains illustrations of the mite causing cattle mange, animals affected with the disease, animals swimming through the tank, etc., together with construction of dipping plants for cattle and swine. The bulletin may be obtained free of cost by residents of the State upon writing to the Agricultural Experiment Station, Lincoln, Neb.

EXTERNAL ULCERATIVE ANO-VULVITIS.

BY S. T. MILLER, D. V. S., SHELBY, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

My attention was first called to this disease in the winter of 1897 while at Kansas City, when Dr. Steddom with other inspectors of the Bureau of Animal Industry were sent into Kansas to investigate a peculiar outbreak of disease among cows and heifers. On their return to Kansas City they reported a disease affecting the vulva of cows and heifers. From their report Dr. Sesco Stewart, of Kansas City, made a verbal report of the disease at a meeting of the Missouri Valley Veterinary Medical Association. The next article was that by Dr. C. Miller, of Ottumwa, which appeared in the AMERICAN VETERINARY REVIEW for April, 1901.

My attention was next called to an outbreak in my brother-in-law's herd near Harlan, Ia., in the winter of 1900. My brother, Dr. D. H. Miller, was called to treat that outbreak. Drs. J. I. Gibson, John J. Repp, and S. H. Johnston also visited the outbreak. The next outbreak occurred in my own practice about October 15th, 1901. In the herd there were 23 head of cows and heifers and 4 steers. On first examination I found only two or three calves affected. In about 3 or 4 days I was surprised to find all except one old cow affected, including the 4 steers.

The next outbreak occurring in my own practice was about Nov. 23, 1901. There were on the farm about 35 head of cattle, including cows, heifers, steers and calves. About half of the number were found to be affected, but there were no steers affected in this herd.

The next case was that of 26 head in a feed yard, 22 steers and 4 cows, of which 4 cows and 8 steers were affected. Some of the steers were affected very badly. On the same farm there were about 25 head of pure-bred shorthorn cattle and 50 grade stock cattle. None outside the feed yard have shown any signs of the disease.

The first noticeable symptom was serous exudate, rapidly forming into a brown scab, under which was very foetid pus, with extensive inflammation. The affection usually occurred on the lower portion of the lips of the vulva in heifers and cows, and in steers around the anus or roots of the tail. The scabs which formed seemed to spread very rapidly, destroying more and more of the underlying tissue and forming a thicker and thicker scab. The scab if peeled off would expose a raw surface, which would bleed very readily. In a short time a new scab would be formed.

In the herds Nos. 1 and 3, I used for treatment a wash of a strong solution of mercury bichloride to cleanse the parts, after which I applied an ointment made up as follows :

Iodoform,	20 grains
Oil of eucalyptus,	40 minims
Carbolic acid,	20 "
Petrolatum enough to make	2 ounces.

This treatment effected a very speedy and permanent cure. The animals in herd No. 2 were never treated, but are slowly recovering.

DISCUSSION.

Dr. Repp described the gross and microscopic morbid anatomy of the disease. He said he had made some research in connection with *Dr. Miller's* outbreaks Nos. 1 and 2.

Dr. Brimhall, in answer to a question, said he had not met with the disease in Minnesota. He asked if any one had made any observation as to whether or not the disease is contagious.

Dr. S. T. Miller replied that he had witnessed a case in which a bull from a healthy herd had gained access to a herd in which the disease existed, served cows there, and soon afterward served cows in the healthy herd, yet none of the healthy cows acquired the disease.

DR. LIAUTARD writes from Paris, June 16: "Dr. Wm. Dougherty has just been here for a week. I did my best to Parisianize him, but am afraid I failed. He is well, and has left for Aux-les-Bains, to be scraped, rubbed and rested."

OHIO COMBATING TUBERCULOSIS.

BY J. C. BURNESON, VETERINARIAN OHIO AGRICULTURAL EXPERIMENT
STATION, WOOSTER, OHIO.

Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

In the preparation of this brief paper I have found much difficulty in treating the subject as it deserves without infringing somewhat upon the original thoughts of others. The subject of tuberculosis has been so frequently discussed and written from every view point during the past few years that one can hardly say anything concerning it without almost quoting the words of some other writer upon the subject.

I do not wish to touch upon the pathology of this disease, as you will no doubt have ample opportunity to debate upon that part of the subject at the reading of the paper prepared by Dr. Kent, but will confine myself to a very brief report of the tuberculin testing of cattle throughout the State by the veterinary department of the Experiment Station and the attitude of the herd owners, the sanitary conditions found and some few closing thoughts on legislation.

The testing of cattle has been entirely optional with the herd owners, and therefore the herds which have been inspected are those where application has been made by the owners. The majority of the herds inspected have been small, country herds, subject to a life of pure air, sunshine and exercise. Nearly their entire life has been spent in open air and it is a well-known fact that these herds are the healthiest to be found in any country; however, 14.69 per cent. of 1300 animals inspected have been found tuberculous in spite of the most healthy surroundings, while 3.06 per cent. of the remaining animals were found suspicious. More than half the herds inspected were found infected. My experience indicates that the nearer the city one approaches the higher the percentage of tuberculous animals found, and I have also learned that this territory of the dairyman, is very hard to invade under the present conditions for inspection. It is perhaps needless to state to this body of veterinarians that the

very individuals whose herds we most desire to inspect are the very ones who do not care to have anybody about who may even perchance detect anything wrong with the animals of their herds. I mean the large dairymen near our cities, and breeders. The majority of these men will never have their herds inspected until laws, either municipal or state, are enacted, compelling them to do so. The conditions for inspection have certainly not been burdensome to the herd owner;—no expense except the board of the veterinarian during the inspection and his transportation from and return to the nearest railway station; no destruction, or even condemnation of cattle found tuberculous, advice given as to what course to pursue to eliminate the disease from the herd should it be found therein. Surely these are conditions liberal enough and light enough for any sturdy herd owner to bear should he care to learn the status of his herd. It is not lack of education upon this subject which causes hesitation, because at nearly every dairy meeting, farmers' institute, or agricultural meeting of any kind this theme has been most interestingly read and discussed; besides almost every agricultural journal has published articles of much interest concerning this disease. 'Tis true, many articles have been published by certain papers derogatory to the tuberculin test, but they have been written by those who never tested a cow, or perhaps never saw one tested. They have picked the dross from the gold and with it forged a sword, the wielding of which is only too apparent. This has been done for selfish motives alone, entirely regardless of the true conditions of the herds and the future outcome. These men, who should be the promoters of any movement towards bettering the physical conditions of the animal industry of their country, have but shown their hands as they really are. The dairymen seem to be willing to keep the dross (or a diseased herd) in preference to the pure gold (or a herd purified by the refining process of the tuberculin test). They hold the arguments of those writers up before them as a fortification. I think the true sentiments of a very great majority of the dairymen and breeders were expressed by the very frank words of a

dairyman near Columbus when he said to me "what I don't know don't worry me."

The reasons of the great prevalence of the disease among these large herds are, 1st: large numbers of cows are found crowded together, generally without adequate hygienic facilities, or if the necessary facilities are present, during the inclement weather when the herd is kept in its quarters these facilities are closed in order to make the quarters comfortably warm, and thus facilitate the production of milk. There seems to be a mistaken idea prevalent among the herd owners that a window in a barn is only for the admission of a stream of light during cold weather. I have inspected herds which were confined in barns so tightly closed that one had to blink his eyes upon entrance, owing to the foul air which rushed through the doorway. Then again some dairy barns are so well lighted, ventilated and cleaned, that it is certainly a great pleasure to meet with such a welcome contrast. We all know that if ventilation be neglected it will lead to a lessened vigor of the body tissues and eventually be a potent cause of injury and loss to the dairyman. There should be no preceptible difference between the freshness of the air inside and that outside, although no draught should be allowed to pass through the building. One thousand cubic feet per animal should be allowed with good ventilation. All stables, the measurements of which I have taken, have fallen far short of this figure, with one exception; this contained 1537 cubic feet per animal, but the ventilating facilities were only fair; the remainder varied from 177 to 648.28 cubic feet of air space per animal. In this estimate I have, of course, deducted the space occupied by the animals which the quarters were arranged to accommodate.

Exercise is another great necessity which is found wanting in these large dairies during the winter months. A walk to the water-trough nearby, sometimes inside the stable, while some herds even drink the water as they stand in the stall, having it continually before them, regulated by floating valves. The city dairy herd is also continually receiving new additions

from the market, which in many cases are tuberculous animals shipped there for the purpose of disposal away from home to prevent any recourse. In my travels I frequently hear of scavengers waiting to learn the results of the test in order to take off the hands of the owner any cows which he might want to dispose of. These cows are generally shipped to market and thus pass to those who are always on the lookout for new cows.

These serious complications must be considered before the ravages of tuberculosis can be reduced. It is these causes which are largely responsible for the present condition of things, and so long as they are in operation we can never make satisfactory progress. Of course, it may be many years before ideal conditions attended by their perfect results, are possible, so the improvement of existing conditions should be pushed as rapidly as possible, taking the most seriously threatening problems in their order, and the result is obvious to all.

Legislation, of course, is of paramount importance in the suppression of this disease. Other States have legislated, some good, some bad, and some indifferent. Ohio should profit by the experience of these States by carefully considering all obstacles which have arisen in their paths and avoiding them as much as possible. While some may consider this an easy matter, I believe it will be a very puzzling problem to handle. "Many people make many minds," and what one may consider an injustice another may consider perfectly just.

The questions of the disposal of affected animals and compensation, or no compensation, I believe to be *the* puzzling problems. The question of property rights cannot be shaken off in the consideration of this problem. The State, we will learn, will in no way be inclined to place upon itself anything which may become a financial burden; while on the other hand the herd owners will not feel disposed to be the sole losers for the welfare of the commonwealth, both as regards the possible transmissibility of the disease by the sale of their dairy products, or the restrictions which may be placed upon them in regard to the disposal of their affected animals, as in many cases the loss

to the herd owner would be the straight road to certain financial ruin, providing no compensation be allowed by the State. I do not wish it understood that I am in favor of indiscriminate slaughter, but I have seen herds where a great number could be separated from the others by sight alone, without the trouble of giving them a careful clinical examination, and such animals you will doubtless all concede should be slaughtered without delay. There are cases which the State should take in hand and dispose of and should indemnity be allowed, it should not be sufficient to encourage traffic in this direction. The State should not be a profitable market for scavengers.

Another point which should be carefully guarded in case of legislative consideration is the possible substitution of some farce inspection for the detection of this disease. This is a point which should not be overlooked, as local boards of health have done this very thing and the inspection of their dairy herds is a complete burlesque from beginning to end. The intelligent administration of tuberculin as a diagnostic agent by competent veterinarians should be underscored, as the veterinary profession well knows ere this, "there is many a slip twixt the cup and the lip" in regard to our legislative desires. The State should prohibit the importation of breeding and dairy animals until they have been proven by the tuberculin test to be free from that disease. Dairy inspection should be compulsory and the proper authorities should at once perfect a system commensurate with the vast importance of the subject. Scavengers should be summarily dealt with, as it is certainly a crime for one to run a hotbed of tubercle bacilli, thereby being a great source of dissemination of so dangerous and destructive a disease as we have now to struggle against. It would be well for every city to emulate the ordinance in vogue in the city of Minneapolis. I think this is the nearest to perfection for its purpose I have yet seen. It is simply a matter of license or no license, to sell milk within the city, therefore cannot be considered extra territorial.

I would like to hear an animated discussion on the subject

of legislation by this body of representative veterinarians of the State. I do not think there could be another body within our State more capable of discussing this problem. All conditions throughout the State are known by it and it should therefore be best fitted to discuss the needs for the suppression of this, our common enemy—Tuberculosis.

INVESTIGATING TUBERCULOSIS.—The King of England evidently intends to find out as much about bovine and human tuberculosis as the science of the day can teach. He officially appointed a commission to inquire whether the disease in animals and man is one and the same; whether animals and man can be reciprocally infected with it; and under what conditions, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances favorable or unfavorable under which transmission takes place. The members of the commission are Sir Michael Foster, Professor of Physiology at Cambridge University and a Fellow of the Royal Society; Dr. German Sims Woodhead, Professor of Pathology at Cambridge; Dr. Sidney Cox, Professor of Pathology at London University and another Fellow of the Royal Society; Dr. John McFadyean, Principal and Professor of Comparative Pathology and Bacteriology at the Royal Veterinary College, London; and Dr. Rupert William Boyce, Professor of Pathology at University College, Liverpool. To these men the English people think the investigation of the subject may safely be entrusted.—(*Breeder's Gazette*.)

BOSTON is to have a work-horse parade, and an association, composed of some of the best-known citizens, has been formed, and the exhibition will take place in the early part of September. The object of the association and its parade is to improve the condition and treatment of work horses by encouraging their owners and drivers to take pride in their appearance. Incidentally, also, it is hoped that the public generally will be led to feel an interest in the work horses of the community, for the parade will be held in some boulevard or other accessible place, and will, in fact, be an open-air horse show, free to all spectators. Prizes will be offered for horses used by the city, packing companies, coal dealers, truckmen, contractors, medicine and beverage dealers, ice companies, brewers, express companies, and special classes for horses used for hacks, herdicks, delivery wagons, fire and police.

PEMPHIGUS FOLIACEUS, OR, BULLUS EXFOLIATIVE DERMATITIS IN THE HORSE.

BY F. E. ANDERSON, V. S., FINDLAY, OHIO.

Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

About January 20, 1901, my attention was called to a 16-year-old chestnut-sorrel gelding, owned by J. H. Boger, Postmaster of Findlay, Ohio. A family horse in good condition up to the time of this affliction the day before.

The causes of which there is nothing certain known, so far as I can find in my limited research of the subject, and further that it is a disease extremely rare in our animals.

The symptoms presented were that of acute vesicular eruption of the skin extending from the ears to the shoulders. The hair bedewed with moisture and the skin very tender to the touch. During the day his neck dried up. Next morning the neck was fairly dripping with a cold perspiration and the vesicles had become confluent, forming ovoid bullæ, varying in size from two to ten inches in circumference and three-quarters of an inch thick, covering the entire neck and extending down over the breast between the front legs, which were swollen down to the knees, also the inferior surface of the abdomen, back to and including the sheath. The third day the hind limbs began to swell at the body and within a week the legs were swollen down to the feet.

The perspiring at night extended gradually from the neck to back of forelegs, then to the flank and, eventually, all over the body, followed soon with the bullæ, until it was impossible to put your finger on a spot that was not affected, hot and extremely sensitive to the touch. These bullæ were filled with a transparent amber liquid; in about twenty-four hours after they formed the liquid would escape and glue the hair together, forming a hard scab when dry, which would exfoliate in from one to two weeks, taking the epidermis and hair with them, leaving a shining red surface, which persisted for some days, when recovery would apparently take place, new hair come in at once, only

to be attacked as before, and by the time the desquamating process had followed the dermatosis all over the body, new bullæ were forming where the first disappeared and each recurring attack would be ushered in by chills and fever, until this process had repeated itself three times over the whole body and down the legs to the hoofs; no part of the integument escaping, even to the inside of the ears and false nostrils.

At times the only hair to be seen was in the mane, tail and the coarse hair at the fetlock, where the exfoliation was not so thick, but would soon come off through the hair in large paper-like scales. During the whole time he stood on his feet, and had a very fair appetite, except during the pyretic stages. From a fine looking, fat horse in January, he was reduced by the first of May to a mere skeleton with a denuded skin stretched over it. About May 1st the disease commenced to subside and the bullæ only appeared in spots along the back and neck, when the horse was turned on pasture, and by July 1st had ceased entirely, a nice smooth coat of hair covering the body, which was filling up with flesh, and began to look like a horse again.

About August 1st the horse was brought in and put to work, which he stood, and thrived up to about the last of October, when he was taken with chills and fever, ushering in another attack of the old trouble, which proceeded as before, and the sample of his last exfoliation I have here, which was taken from him Jan. 7, 1902, almost one year since the start of the disease, during which time he has lost four coats of hair completely, along with the epidermis. There was no affection of the mucous membrane at any time, which is mentioned in some cases by Kafosi, who says it takes many months or years for the process to occupy the whole body in man, while in this case it did its work in about 40 days.

Loiset, in Freidberger and Fröhner, describes an enzootic eruption appearing on the loins, croup and posterior members of the ox, characterized by ovoid bullæ filled with a transparent liquid, followed later by scabs, and the skin became desquamated, with rapid recovery.

Seaman recognized a similar eruption on the ox, which was accompanied by chills and fever.

Dieckerhoff observed a bullous dermatitis which was characterized by flat or slightly rounded vesicles, from the dimensions of a walnut to that of an inverted saucer, which were developed on the skin of the abdomen, head, neck, shoulders and thorax of five horses, with great itching, but he does not mention any exfoliation.

The cases described in the ox much resemble pemphigus vulgaris of man, a disease which is quite different from pemphigus foliaceus, which often causes death, as Kafosi estimates that 10 per cent. of the cases do not recover permanently.

The treatment I resorted to were many and varied, beginning with a purgative, followed by febrifuges and sedatives, until the fever subsided, then alteratives—hyposulphate soda, iron, quinine, arsenic; locally nitrate of mercury ointment, sol. alcohol and corrosive sublimate 1-5000, later 1 to 2000, with witch hazel (Epicarin 50 parts, alcohol 100 parts, and oil resini 10 parts), applied after baths of warm water, containing 1 oz. to the gallon of Minor's fluid, with German liquid soap, which did more good than anything I had done. As the weather got warm in the spring the improvement was noticeable, but slow, as it was a month after turning to pasture before the bullæ stopped forming entirely, during which time I went to the pasture several times and bathed the remaining affected spots with sol. corrosive sublimate.

When the affection returned with frost and cold weather I was ready to send the patient to the fertilizer works, but the owner would not agree to that, so the first thing I did was to clip the hair and give a purgative, which apparently improved the condition for a few days by reducing the swelling, etc., which returned in about two days. Then, as an experiment, on Nov. 11, 9.00 A. M., with a temperature of 103, pulse 70, I gave 3 iv. creolin hypodermically, full strength, in the neck. Nov. 12, 9.00 A. M., temperature 101, pulse 48; applied $\frac{1}{2}$ gal. Minor's fluid, full strength, all over the body, rubbed well in

and left for one hour, then washed off thoroughly with warm soft water, and kept horse in warm room until dry. At 3.00 P. M. gave him 3 iii. creolin hypodermically, on opposite side of neck. Nov. 13, 7.00 A. M., temperature $105\frac{1}{8}$, pulse 84; gave 3 i. fluid extract digitalis and repeated the dose at 12.30 P. M.

Nov. 14, 7.00 A. M., temperature 101 2-5, pulse 52.

" 15, " " " 101 2-5, " 48.

Swelling all gone from body and limbs and horse laying down, for the first time in two weeks, but a slight loss of appetite; passed a large quantity of dark urine, which continued for over a week, during which time the liver became congested with yellowness of the mucous membrane and complete loss of appetite and an elevation of the pulse to 100, without any elevation of the temperature.

During which time I gave him 3 ounces of artificial Carlsbad salts per day in 3 doses and $\frac{1}{2}$ drachm fluid extract digitalis every other day. Nov. 24, temperature 101, pulse 48, water clearing up and yellowness of mucous membrane disappearing and a return of appetite with general improvement up to Dec. 6, when I sent him to the country with no bullous swellings of the skin, but a slight exfoliation of the epidermis in thin scales coming off through the hair. Did not see him again until Jan. 7th, when his entire coat of hair was loose from the body, just hanging on by an occasional hair, but much improved in flesh and general appearance and no sign as yet of vesicles forming; whether they will or not is to be seen later.

"APOPLECTIFORM SEPTICÆMIA IN CHICKENS," a preliminary report on a highly fatal disease caused by a nonpyogenic streptococcus, by Victor A. Nørgaard, V. S. (Copenhagen), chief of the Pathological Division, B. A. I., and John R. Möhler, assistant chief, same division, has recently been issued by the Department of Agriculture. The small brochure is interleaved with beautiful colored plates, illustrating the appearance of the organs of diseased animals and the microscopical slides showing the streptococci and the tissues invaded by them.

"EMERGENCY REPORT ON SURRA," by D. E. Salmon and Ch. Wardell Stiles, has just been issued by the Bureau of Animal Industry. Secure a copy, as it is intensely interesting.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

RUPTURE OF THE FLEXOR TENDONS AS A COMPLICATION OF AZOTURIA.*

By CHAS. W. BOYD, V. M. D., Pittsburg, Pa.

Rupture of the flexor tendons is usually of traumatic origin, and when we meet with such cases the direct cause is in the majority of instances known. However, we occasionally hear of cases which were not of traumatic cause, but as a sequel of some diseases which run a long course. I wish to submit to you a report of a case of rupture of the flexor tendons of both anterior limbs which has a peculiar history, and you may use your own judgment as to what the primary cause in this case was.

History.—A fine carriage horse, nine years, weight about 1000 pounds; had been standing in the stable for about ten days without exercise of any kind; after he had been driven about five miles fell on the street and was unable to rise; he was immediately removed to a stable in ambulance. We again made an effort to get him up, but did not succeed. The animal was apparently in a helpless condition. I made a careful examination and found all symptoms characteristic of azoturia, and I diagnosed it as such.

I prescribed the ordinary form of treatment and left him in charge of two attendants; when I called the following day, the animal was still down, but I was pleased to learn that he had been up twice during the night. With some assistance the animal succeeded in getting up and was able to stand with a little support on either side. I then found there was something wrong with the position of anterior limbs. They had a decided broken down appearance, with the ankles and heels resting on the ground, and toes turned up, exposing to view both soles. On examination of the tendons I found them to be ruptured about the lower third of the metacarpal bones. The rupture seemed to be complete in both, as a space between the torn ends of tendons was easily detected. I decided it was a hopeless case, so ordered the animal destroyed.

* Presented at the Annual Meeting of the Pennsylvania State Veterinary Medical Association, March 4 and 5, 1902.

The attendants did not notice any such deviation of the legs while he was up through the night, so the rupture must have occurred at the time of the last effort in getting up.

We know that azoturia causes degenerative lesions in the muscle fibres in the early part of the disease and statistics show that we sometimes have rupture of muscles or even groups of muscles. As a result of these degenerative changes and which occur in their struggles and their violent efforts to get upon their feet, and we sometimes meet with extension of the muscles and tendons in azoturia.

Lippold has observed a case of extensive extension of the posterior limbs. The ergots were touching the ground and toes turned up, showing symptoms similar to the case I report.

It is true that azoturia rarely involves the anterior limbs, but I sincerely believe that the case I report was one in which both anterior limbs were involved and that this disease was the primary cause of rupture, setting up degenerative lesions in the tendon fibres as well as the muscle fibres.

I submit this to you, hoping that it will be of some interest.

PHYTOLACCA POISON IN CATTLE.

By G. R. WHITE, D. V. S., Nashville, Tenn.

On May 20, the writer was called by telephone from Winchester, a small town, the county seat of Franklin county, Tennessee, situated 85 miles south of Nashville, at the foot of the Cumberland mountain range. The person at the other end of the phone informed me that five of his best young cattle, out of a herd of thirteen, were affected with some peculiar malady, which in his, as well as his neighbors' opinions, was a contagious disease of some character. I asked him to describe to me all noticeable symptoms, which he did as follows:

"Without any apparent cause, my cattle ceased eating four days ago, and are now in a bad fix. I have five sick ones out of a herd of thirteen. They were at first constipated, but are now passing much mucous, as well as blood, from the bowel. I also notice some shreds of intestine. They are lifeless, noses almost against the ground, ears flopped, eyes sunken, back arched, high fever, muzzle dry and hot, slight discharge from nose, almost constant straining in their endeavor to pass fæces from the rectum. They are very weak, and on this account

stagger and stumble whenever they attempt to walk. Complete loss of appetite and cessation of rumination."

I informed him that it would be impossible to make a diagnosis with any degree of certainty, unless he could arrange in some way for me to see the cattle, as well as the pasture upon which they had been grazing previous to the attack. He then ordered me to come at once and make an investigation. Upon my arrival I found the cattle suffering as he had described.

I pronounced the disease hæmorrhagic enteritis accompanied by dysentery, and began at once to investigate the cause. I questioned the owner as to the character of food the cattle had been eating. He informed me that they had been running at grass for past few months, and to his personal knowledge had eaten nothing except what was obtained from the pasture, which was a 75-acre field with plenty of grass and clover of a good quality. We searched this pasture from end to end, but failed to find anything that in my opinion would produce the trouble with which his cattle were suffering. We gave up in despair the idea of locating the trouble, and were returning to the barn, when the owner, for some unexplainable reason, informed me that he had allowed the cattle to run for two days in a "winter oat patch," which had been cleared of timber the year before ("new ground"). We visited this "patch" and found thousands of *phytolacca* plants ("poke-stalk"). Hundreds of these plants had been eaten off even with the ground by the cattle, so my diagnosis was hæmorrhagic enteritis accompanied by dysentery due to poison from eating *phytolacca* plants.

A CASE OF TETANUS IN A HORSE TREATED WITH SERUM.

By E. MCGRAW, V. S., 187 S. Hoyne Ave., Chicago, Ill.

Jan. 12, 1902, 2.00 A. M.—First visit; mare about nine years old, weight about 1100 pounds, health excellent prior to receiving, a few days since, a punctured wound on the right hind leg, caused by a piece of dirty wood block. Animal very stiff, barely able to walk in a very stilty manner, tail elevated on a line with the back and rigid, jaws tightly set, muscles of jaws and neck rigidly drawn and standing out like ropes. Temperature 102° F. The wound was immediately cleansed and dressed with creolin. I administered hypodermatically 30 cc. veterinary anti-tetanic serum (P., D. & Co.)

Jan. 13, 9.00 A. M.—Temperature 101.5° F., muscles somewhat relaxed, very much improved, eating gruel fairly well. Repeated same dose of serum. Again cleansed and dressed the

wound with creolin. This same attention was given to the wound at each subsequent visit.

Jan. 14, 9.00 A. M.—Temperature 100.8° F., eating mash fairly well, muscles relaxed. Injected serum in same dose. 4.30 P. M.—Temperature and conditions same as morning. Administered same dose of serum.

Jan. 15, 9.00 A. M.—Temperature 100.2° F. Improving rapidly. Administered same dose of serum. 5.00 P. M.—Temperature 101.4° F. Gave same dose of serum.

Jan. 16, 9. A. M.—Temperature 102.2° F., not so well, more difficulty in eating. Gave 30 cc. serum. 5.00 P. M.—Temperature 100.8° F. Eats better, jaws again somewhat relaxed. Repeated same dose of serum.

Jan. 17, 9.00 A. M.—Temperature 100.2° F., very much better, eating oats and hay. Repeated serum in same dose. 5.00 P. M.—Temperature normal, greatly improved, eating well. No serum given.

Jan. 18, A. M.—Temperature 100.4° F., quiet and eating well. Gave 30 cc. of serum.

Jan. 19, 10.00 A. M.—Temperature 100.4° F., eating well, feels well, laid down and got up nicely for the first time since attack. Gave 30 cc. serum.

Jan. 20, 10.00 A. M.—Temperature 104.1° F., much worse, nervous, eyes bad, muscles much more rigid. Found that wound had suppurated in another place and was in bad condition. Cleansed wound thoroughly, administered 30 cc. of serum. 5.00 P. M.—Temperature 101.4° F., quiet, eating gruel again. Gave 30 cc. serum.

Jan. 21, 10.00 A. M.—Temperature 100.4° , very much better, standing on foot of injured limb, eating well. Gave same dose of serum.

Jan. 22, 10.00 A. M.—Temperature normal, greatly improved, wound dry and clean, eating well and quiet. Gave 30 cc. of serum.

Jan. 23, 10.00 A. M.—Temperature normal, continued improvement, walks well, eats well, seems to feel well in every way. Gave 30 cc. serum.

Jan. 24.—Temperature normal; on being led in to alley tried to jump, run and play. From this date on recovery was continuous and uneventful until Jan. 26th, when he was discharged cured and ready to work.

I consider the recovery remarkable on account of the severity of the attack, and I feel sure that had I continued the admin-

istration of the serum twice a day, on Jan. 17th and subsequent days, instead of only once a day, recovery would have been much more rapid and the bad conditions prevailing on the 20th and 21st would not have occurred. I am very much pleased with the result of the treatment, especially when taking into consideration the fact that the animal was under most unfavorable surroundings, in a damp and dirty stable, with fifteen other horses, and subjected to the annoyance of unusually loud and disturbing noises and movements. In spite of these unfavorable conditions the animal was well, and at work, in just two weeks from the time I was first called, and after receiving only sixteen bulbs, or 480 cc. of the serum.

The result, in this case, seems to me so satisfactory that I am encouraged to employ the same treatment in every case of tetanus that I may have.

RUPTURE OF THE OESOPHAGUS IN A COLT.

By A. W. BAKER, V. S., Brasher Falls, N. Y.

Reminded by the report in May REVIEW of Dr. T. S. Childs, of Saratoga Springs, upon a case of ruptured oesophagus, I am impelled to place a somewhat similar case on record.

The subject was a two-year-old colt, owned by a farmer in the town of Dickinson. Upon responding to the call, I found the patient with neck badly swollen, a large three-cornered wound discharging pus freely. From the foetid condition, I concluded that the wound had been inflicted at least two days previous. Upon examination of the fence surrounding the pasture, a sharp cedar stick was found covered with blood and hair. I dressed the wound on May 8th, putting in two stitches. Four days later the stitches gave away and he began to eat, but the food came out through the wound. I was called again on May 12th. The swelling had disappeared, and I found a hole large enough to insert two fingers, and the oesophagus ruptured. I passed a three-quarter-inch rubber tube into the mouth, and down the oesophagus to four inches below the rupture. I then made an incision down on to the oesophagus, running longitudinally four inches each side of the original wound. With the tube still in place, I next put eight sutures in the oesophagus with catgut. Finally sutured the muscles deeply, leaving skin wound open. Two quarts of gruel were given as a drench, through the tube, then removed the latter. The patient was muzzled to prevent him from eating, and the owner instructed

to give, per rectum, six or eight ounces of oatmeal gruel every four hours for fourteen days. I saw him again the 26th. The wound looked healthy. Treatment had consisted of a neck bandage applied with creolin solution (teaspoonful to the pint). He was given carbolic acid in his drinking water, using a teaspoonful to a pint of boiling water, and about six ounces of that solution in three quarts of cold water, kept constantly within reach. My last visit was on May 31st. The wound was entirely healed and he was beginning to eat a little grass. I discharged the case as cured, and expect to castrate him as soon as practicable after his weakened condition.

PERITONEAL ABSCESS.*

By Dr. J. F. ROUB, D. V. S., Monroe, Wis.

The patient was a dark bay colt of the heavy draught breed, two years old, weighing about twelve hundred pounds if in good flesh. The owner lived eighteen miles from town, and, like a good many other framers, did not want to go to the expense of a visit, but informed me that the colt was getting very thin in flesh and had been running down for the last two months. At the owner's request I prepared a tonic powder for the colt. This was March 10.

I heard nothing more from the case until May 5, when the owner called at the office and reported that the colt was becoming more and more emaciated every day; yet the appetite was fairly good; the colt staggered when walking and appeared to be weak across the loins and the owner was inclined to think that he had a case of kidney trouble. The information that I could get from the owner was not sufficient to enable me to diagnose the case, and I so informed the owner, and he concluded to have me call and see the colt.

On the following day I drove out to the farm, and, to my surprise, found the colt a mere endo-skeleton. Examining my patient carefully I was not able to discover any diagnostic symptoms; pulse normal, temperature 102. I came to the conclusion that I had some constitutional trouble to contend with and decided to make a rectal examination, which gave me value received for my trouble. By manipulation I discovered what I thought to be two distinct tumors just anterior to the right anterior iliac spine. By using my left hand in the rectum and

* Presented to the Wisconsin Society of Veterinary Graduates, at Milwaukee, Sept. 10, 1901.

he right externally was enabled to make out their form quite distinctly. They were heart shaped, one above the other; the superior one was about a third the larger, and the walls seemed to be very dense and hard. At this point I informed the owner where the trouble was and that the treatment would be an operation, and that, considering the condition of the colt, the chances of recovery were not very encouraging.

Modus Operandi.—Not considering it necessary to cast the colt on account of its weak condition, I proceeded to operate standing. With the left hand in the rectum as a guide, I made an incision with a scalpel through the epidermis and passed a trocar into the abscess. On withdrawing the trocar there followed a thin, creamy foetid pus, at least two quarts. Next I tapped the second abscess in the same manner, and found about one quart of the same kind of pus. I next made an incision from the lower point of tapping upwards about four inches long; this gave me ample room to explore the abscesses, which proved to be multilocular cavities. I then washed the cavities out with a 5 per cent. solution of carbolic acid and left instructions to inject the tincture of iodine once daily.

I had no report from the case until July 8th, when the owner called at my office to inform me that the colt was gaining in flesh and doing nicely with the exception of a small fistulous opening at the lower part of the incision. At the request of the owner I made a second visit, and, after making a rectal exploration, found the walls of the abscesses much diminished in size. I cast the colt and made a free incision from the fistulous opening downward and cleansed the parts thoroughly, leaving instructions as before, to inject the tincture of iodine once daily. The colt then made a very rapid recovery and without a blemish.

DISEASED TESTICLE.

A. W. Baker, V. S., Brasher Falls, N. Y., reports that on May 5 he removed from a large four-year-old colt a left testicle weighing three pounds thirteen ounces. When incised there was contained in the centre two ounces of creamy pus. The right testicle had atrophied to the size of a butternut. The operator has practiced castration since 1863, averaging about three hundred per year, and says that nothing of this kind has ever come under his observation before. He asks whether any one else has met with such a case.

DEPARTMENT OF SURGERY.

BY L. A. AND E. MERILLAT,

Chicago Veterinary College, 2537-39 State Street, Chicago, Ill.

SURGERY OF THE EYE, EAR AND UPPER AIR PASSAGES.*(Continued.)*

CANTHOPLASTIC OPERATIONS.—Operations upon the canthus of the eye of domestic animals are seldom used to improve their appearance, but are often indicated as a result of accidents. Dogs will injure their eyelids in the pursuit of game or in fights; cattle injure their eyelids in passing through thickets or thick underbrush during the summer months when flies are bad, and horses frequently lacerate them in runaways or during sickness when they become delirious. We will divide canthoplastic operations as follows:

1. Tarsorrhaphy or blepharorrhaphy.
2. Canthotomy or blepharotomy.

1. *Tarsorrhaphy* or *Blepharorrhaphy* is a procedure by which the transverse diameter of the palpebral aperture is reduced. To accomplish this, the borders of the eyelids at either the inner or outer canthus are sutured together. If the abnormal aperture is congenital the external canthus is generally the one operated upon, but if the operation is indicated as a result of an accident either one may be involved.

The operation is a very simple one, especially when performed upon the external canthus. The instruments needed for the procedure are, a small scapel; a pair of small forceps; and a few needles, armed with sterilized silk.

Operation.—A small portion of the eyelid containing the eyelashes is removed from both eyelids, being careful not to remove the orifices of the Meibomian glands. When the required amount of eyelashes are removed as mentioned above, the sutures passed through the middle of the surgical wound resulting from the removal of eyelashes of upper and lower eyelids; the sutures should be so adjusted as to bring both surgical wounds in apposition. The eyelids must be immobilized by the applications of bandages and inflammation suppressed by cold applications.

Internal Blepharorrhaphy is a remedy or rather a surgical interference that is sometimes used to improve the evil effects of a paralyzed obicularis muscle. By suturing the internal can-

thus, the muscle is shortened and the tonicity increased, which improves the palpebral fissure. Besides, the operation has been a successful procedure in the treatment of *epiphora*. The operation will not improve all cases, but those that are due to hypersecretion without obstruction of lachrymal duct, can be considered indication for the operation. The discharge of tears caused by obstruction of the duct leading from the eye is never benefited by this procedure. The operation is performed in the same manner as *external blepharorrhaphy*.

2. *Canthotomy*.—The preceding operations were intended to decrease the transverse diameter of the palpebral fissure, but as there are conditions which occasionally arise in the treatment of ocular diseases that require an enlargement of the fissure, we will also consider the operation indicated in this connection. The indication for such a procedure is either to relieve the eyeball of excessive pressure resulting from abnormal conditions of the eyelids caused by disease, whether acute or chronic, or to enable the surgeon to remove retrobulbar tumors of an enlarged eyeball. We can consider canthotomy as follows:

(a) *Temporary Canthotomy*.

(b) *Permanent Canthotomy*.

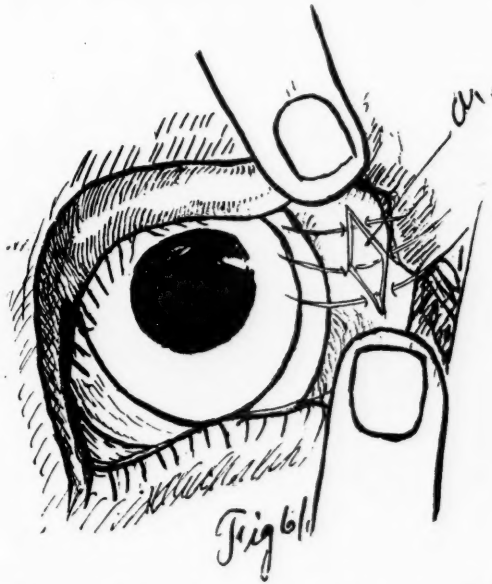
(a) *Temporary Canthotomy*.—When the enlargement of the space between the eyelids is only temporary the incision is made horizontally through the commissure and allowed to reunite with the surgical edges of the wound in apposition. The incision may be made with a straight blunt-pointed pair of scissors. In some instances the wound may be sutured; however, in all cases the surgeon must determine whether the wound should be sutured or not. The after-care will depend upon the conditions which were considered indications for the operation. The most important feature in the after-care is to prevent infection.

(b) *Permanent Canthotomy*.—This operation is more tedious than the previous one. The object in permanent canthotomy is to make a permanent enlargement of the fissure, and for this reason the edges of the wound must not be allowed to reunite. This is accomplished by lining the wound edges with conjunctiva.

The instruments for the operation are: Pair of straight, blunt-pointed scissors, one or two pairs of artery forceps and three needles armed with silk.

Operation.—The first steps of this procedure are about the same as in the preceding one (*temporary canthotomy*). The

eyelids must be placed in such a position as to make the commissure stand out in the proper position (*which will vary in different animals*). The operator then passes the blunt-pointed scissors between the eyeball and the commissure as far as the incision is to be made and with one stroke the commissure is cut, making a horizontal incision. The hæmorrhage must be arrested by pressure and tortion of arteries. It is sometimes very hard to control the hæmorrhage, and as it is not advisable to use styptics that will destroy the tissues and retard primary union, we would recommend the use of warm or ice water for this purpose; extract of suprarenal capsules is a very good styptic.



When the hæmorrhage is arrested the wound is changed to a vertical diamond-shaped wound by traction (Fig. 61-a); the conjunctiva is then loosened from the subconjunctival tissue and three stitches applied (Fig. 60-a) which should be removed in three or four days. The after-care is the same as in any other canthoplastic operation.

SURGICAL ITEMS.

Rupture of the Stomach in the Horse Without Flatulence.—A bay carriage horse that had been idle for several months and fed on small rations was suddenly put to hard work and fed accordingly. After eating a quantity of hay and six quarts of

oats, following a long drive, he was taken with colicky pains of a mild continuous type, which continued for twenty hours without abating. The pulse and temperature remained normal, while the respirations and countenance showed only a nominal amount of internal distress. At the end of twenty hours he suddenly showed symptoms of shock: rigors, profuse perspiration, coldness of the surface, accelerated respirations, and rapid, running down pulse. He died three hours later and a post-mortem revealed a rupture fourteen inches long at the greater curvature of the stomach, with the contents distributed through the peritoneal cavity.—(L.A.M.)

Habitual Luxation of the Patella.—Schumacher, of Milwaukee, reports a case of habitual luxation of the patella that was cured by dividing the internal straight ligament, first on one leg and two weeks later on the other. The operation has been performed by an Italian veterinarian, but never to our knowledge has it ever been undertaken in this country.—(L.A.M.)

DOG FOUNTAINS to the number of seventy are to be placed in the principal streets of New York City during the summer months. A fund has been created by private subscriptions, and the necessary municipal authority has been secured for carrying out the humane project. Mrs. Fiske, the actress, started the movement by contributing her check for \$100. The bowls will be attached to fire hydrants, and will be about six inches deep. It is probable that the fund will increase until every street has its fountain.

THE VALUE OF THE HORSE SHOW.—The Baltimore horse show, says the *Baltimore Sun*, was one which will never be forgotten. The excellence of the show did so much to educate horse owners that its results are bound to be lasting. The late show was the first and only one in Baltimore which has been self-sustaining. In those of previous years a deficit has been gracefully made good by public-spirited subscribers. Each year has witnessed an increase in the number of classes and a betterment of the quality of the horses, and the latest exhibition ranked with the best held in the United States. It was not equal to the New York show in some of the harness classes, but in some other classes it excelled New York. This is especially true of the roadster classes. Mr. J. Alexander Preston, who has judged or has been present at all the big shows held in late years in this country, said he had never seen better roadster classes anywhere.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

RECOVERIES FROM WOUNDS OF THE UTERUS [*Dr. Vogel*].
—*Perforation of the Ventral Wall of the Uterus, in a Cow, followed by Recovery.*—After the extraction of a calf, which had a crooked leg, it was found that this leg, in delivering the foetus, pressed against the ventral wall of the uterus, perforating the same to such an extent that the whole hand could be passed through the opening. At that time nothing was done to the wound, and a grave prognosis was given to the owner, with the request to report on the following day in case the afterbirth should not be passed or the animal should develop alarming symptoms. Shortly after, however, the former was easily passed, and the animal remained in perfect health. How easily often severe wounds of the uterus in cows heal, without any treatment can also be seen from the following cases: *Tear of the Uterus, not Penetrating.*—While the author made efforts to replace a prolapsed uterus, through the carelessness of an attendant the organ was torn about 6 cm. in length, through the mucous membrane and the muscularis. The wound bled profusely. The tear with the surrounding part was ligated with a common string, the reposition completed and a supporting bandage applied. Recovery took place without any after treatment. *Large Fibroma of the Uterus, Operation, Recovery.*—One night the author was called to see a cow, the report of the owner being that the animal, after a recent difficult birth, became affected with a prolapsed uterus, of the size of a man's head, which he and the attendants were unable to replace. The examination revealed, instead of a prolapse of the uterus, a hard tumor of the size of a man's head, projecting from the vulva, which absolutely could not be replaced. As the author was not inclined to ride the long distance again on the following morning, he decided, somewhat thoughtlessly, to perform the bloody operation, in spite of the fact that the only instrument he had on hand was a simple, small bistoury. A round incision was made on the mucous membrane covering the tumor, and then the growth was resected, right after which the prolapsed vagina returned to normal position. An exploration per vaginam now

revealed the fact that the tumor was situated on the inferior part of the uterus, directly before the internal orifice of the same, and it is almost inconceivable how parturition of the well-developed foetus could have taken place, passing this immense obstruction. The weight of the growth was about eight pounds, and on section proved to be a very solid, tough fibroma. During and after the operation there were such profuse hæmorrhages that the well-nourished, strong cow was unable to stand up from weakness, and therefore the author before departure recommended slaughtering of the animal, if indicated. But soon the hæmorrhage ceased, and on the following day the animal could get up, after frequent administrations of good drinks, wine and bread, and recovered completely without any after treatment, so that she gave birth to several other healthy calves.—(*Berl. Thierarzt. Wochenschr.*)

A NEW TREATMENT FOR CARCINOMA [*Prof. F. Loeffler*].—Loeffler in studying the history of malaria, found in older medical publications communications recording cases of carcinomata, which healed spontaneously after an attack of malaria. He therefore proposes the treatment of carcinomas by a method of injecting the cancerous person with malarial blood, by which, as known, malaria can be produced artificially. This could be done without any hesitation, as, thanks to the investigations, especially those of Robert Koch, we are enabled to check an infection of malaria produced for therapeutical purposes with the aid of quinine as soon as alarming symptoms should make their appearance. Experimental treatment of carcinoma by injections of infectious organisms, as known, have been already repeatedly tried. Fehleisen, in cases of unoperable cancers, inoculated erysipiel-cocci, and has obtained several good results; still these inoculations were dangerous, because there were no means by which the produced infection could be controlled. Further, the author calls attention to the fact that the principal territories of malaria are the tropical countries, and, as it appears, carcinoma in the tropics is of rare occurrence. Dr. Pagel, a friend to the author, who has practiced medicine for a number of years in North Borneo, could not recall a single case of carcinoma in the long time of his practice. Loeffler suggests the making of further observations in this direction, and particularly to determine by investigations, in what proportion does the frequency of cancers occur in malarial countries, in comparison to its frequency in districts not affected with malaria.—(*Deutsch. Med. Wochenschr.*)

CARBOL-SUBLIMATE SOLUTION.—Army Veterinarian Pantke found the following combination very beneficial in profusely discharging wounds and fistulæ: Hydrarg. bichlor. corrosiv., 1; acid carbolic, 30; aqua dist., 1000. The discharge soon ceased.

GAMGEE'S TINCTURE.—O. R. Knuppel applied this in the treatment of cartilagenous quittor and fistulous withers twice daily, whereupon, after four injections, the necrotic parts were washed out with warm baths. As known, the tincture consists of: Hydrarg. bichlor. corrosiv. 17, plumb. acetic, 34, spir., 136, acid muriat. 2. In cases of fistulous withers, the tracts were previous to its application freely opened.—(*Berl. Thierarzt. Wochenschr.*)

COMMENCEMENT EXERCISES.

NEW YORK-AMERICAN VETERINARY COLLEGE.

The annual commencement exercises of this school were held in conjunction with the School of Law, the University and Bellevue Hospital Medical College, the Graduate School, the School of Pedagogy, the School of Commerce, Accounts and Finance (all departments of New York University), on Thursday evening, June 5, at the Metropolitan Opera House. The exercises attending the closing of the University and the University College and School of Applied Sciences had been proceeding at University Heights since May 31. The Opera House was packed, and it was estimated that a thousand were unable to obtain entrance.

The following gentlemen passed satisfactory examinations before the faculty, and all those who had received the requisite counts before the Regents received the diploma of the College; the remainder will be granted parchments when their preliminary counts are obtained: Oscar Barnett, Jr., Newark, N. J.; Louis Janeway Belloff, New Brunswick, N. J.; George A. Hazel, Brooklyn, N. Y.; Robert Anderson McAuslin, Brooklyn, N. Y.; Warren J. Palmer, New York City; James Lee Shorey, V. S., Hoosick Falls, N. Y.; James L. Wells, Good Ground, L. I., and Roland T. King, Brooklyn, N. Y. Dr. Joseph L. Serling, New York, who passed the faculty last year, and received the requisite counts since, was awarded his diploma.

Robert A. McAuslin passed the best general examination and received the Faculty Gold Medal.

Warren J. Palmer passed the second best general examina-

tion and was awarded the Alumni Prize of Standard Veterinary Works.

Dr. Palmer was also the recipient of the Practical Prize of a case of surgical instruments, for the best practical examination passed before a board of veterinarians appointed by the faculty.

CHICAGO VETERINARY COLLEGE.

The annual banquet given to the faculty and students by the trustees of the Chicago Veterinary College was held at the Sherman House, Chicago, March 13, 1902. Prof. A. H. Baker presided. Prof. L. A. Merillat acted as toastmaster, and the programme was very elaborate. Mr. W. F. Hoehner, senior student, responded to the toast of "The Future of the Profession;" Mr. E. L. Lewis, junior student, responded to the toast "Phases of College Life," and Mr. E. A. Rein, freshman, to the toast "Veterinary Education from the Standpoint of a Freshman." Musical numbers were furnished by the class quartette, Messrs. Hisgen, Parks, Perkins and Axby, consisting of songs, piano selections, etc. Numerous toasts were responded to by the different members of the faculty.

The 18th annual commencement exercises of the college were held at the College Auditorium on Friday afternoon, March 28. Numerous friends of the graduating class and the faculty were present. Prof. Joseph Hughes presided, and, addressing the class, stated that the session concluded was one of the most successful in the history of the college, the number of matriculates being 164. He said that in the class of this year, besides the students who have taken the complete course at this school, there were graduates and advanced students from six other colleges, and this naturally giving rise to more or less friendly competition proved a decided stimulus to the class as a whole in the pursuit of their studies. He congratulated them on their splendid attainments, whether judging them from their ordinary scholastic education or from the amount of technical veterinary knowledge which they possessed. Concluding, he expressed his admiration—an admiration shared by every member of the faculty—of the deportment and general conduct of the class during their attendance. On behalf of the trustees, he thanked the faculty for the highly efficient manner in which they conducted their various classes, directly contributing to the success of the session. He then announced the names of the gentlemen who successfully passed the final examinations as follows:

B. F. Barber, Glidden, Ia. ; C. Baynes, Angers, France ; J. W. Beckwith, Shullsburg, Wis. ; R. J. W. Briggs, Garner, Ia. ; W. W. Bronson, Wyoming, Ia. ; J. W. Bunker, New Providence, Ia. ; L. C. Butterfield, Marseilles, Ill. ; F. W. Brewer, Indianapolis, Ind. ; E. G. Cluts, Canton, Ill. ; Chas. J. Dawdy, Greenville, Ill. ; H. Devitt, Chicago, Ill. ; L. L. Diller, Marshalltown, Ia. ; C. E. Dornheim, Providence, R. I. ; F. Eckert, Reeseville, Wis. ; J. E. Frank, Hastings, Neb. ; G. E. Frye, Ft. Wayne, Ind. ; W. C. Giller, Roodhouse, Ill. ; F. W. Godsall, Ottawa, Ill. ; F. A. Goodbody, Chicago, Ill. ; John P. Graff, New Ulm, Minn. ; H. H. Glenn, Verona, Ill. ; J. L. Halloran, Stapleton, N. Y. ; J. H. Hanna, Burlington, Kas. ; W. L. Hiatt, Erie, Kas. ; N. W. Hillock, Columbus, O. ; A. C. Howe, Des Moines, Ia. ; W. F. Hoehner, Belleville, Ill. ; J. K. Jameson, Paris, Ky. ; E. C. Joss, Fairview, Kas. ; G. A. Kay, Minden, Ia. ; W. J. Kirk, Sharon, Pa. ; Geo. W. Knorr, Louisville, Ky. ; F. A. Laird, Springfield, Ill. ; F. Lett, Jr., Paris Crossing, Ind. ; W. H. Luther, Boonville, Ind. ; R. C. Leu, Highland, Ill. ; C. D. Maulfair, Magnolia, Ill. ; R. Mazza, Petaluma, Cal. ; A. F. Nelson, Jamestown, Ind. ; R. E. Nesbitt, Maroa, Ill. ; C. L. Passmore, Huntley, Ill. ; P. J. Purcell, Bradford, Pa. ; G. A. Rohde, Flint, Mich. ; C. A. Richards, Victoria, B. C. ; T. Schneekloth, Pepin, Wis. ; F. K. Scott, Terre Haute, Ill. ; C. O. Seaberg, Crystal Falls, Mich. ; C. H. Spangler, Lockport, Ill. ; M. A. Stewart, Richmond, Ind. ; S. P. Talbott, Ames, Ia. ; C. D. Tuttle, Canton, S. D. ; F. H. Thompson, Woolley, Wash. ; G. S. Thorp, Palestine, O. ; C. O. Van Winkle, Salem, Ia. ; C. A. Webber, Rochester, N. Y. ; L. E. Warner, Aurora, Ill.

Of this number the following gentlemen graduated with honors : B. F. Barber, F. W. Brewer, W. L. Hiatt, E. C. Joss, W. J. Kirk, Geo. W. Knorr, W. H. Luther, A. F. Nelson, C. R. Richards, C. O. Van Winkle, L. E. Warner, C. H. Spangler, C. A. Webber.

Dr. Edward C. Joss, obtained the gold medal for the highest general average ; Dr. C. R. Richards, the gold medal for the highest standing in equine theory and practice ; Dr. Geo. W. Knorr, the gold medal for the highest standing in anatomy ; Dr. C. O. Van Winkle received the gold medal for the highest standing in cattle pathology ; Dr. C. R. Richards also received the prize for the best examination in surgery ; Dr. E. C. Joss, prizes for the best examinations in meat inspection and helminthology ; Dr. C. A. Webber, prize for the highest standing in pathology and bacteriology ; Dr. W. H. Luther, the prize in

materia medica ; Dr. C. H. Spangler, the prize in lameness ; Dr. J. Frank, prize for highest average in physiology ; Dr. T. A. Schneekloth, prize for the highest standing in hygiene ; Dr. C. J. Dawdy, the prize for the highest average in chemistry.

The degree of Doctor of Comparative Medicine (M. D. C.) was then conferred on the class by Professor A. H. Baker and the diplomas distributed by Prof. E. L. Quitman.

Following the distribution of diplomas came the awarding of medals and prizes, after which the valedictory was delivered by Dr. J. H. Hanna and was heartily applauded.

Prof. A. H. Baker delivered the Doctorate, wishing the students god-speed and alluding to the fine prospects of the veterinary profession as evinced by the numberless requests from all parts of the country for veterinary surgeons, received during the past session, as well as by the large number of students that registered at the Chicago Veterinary College, and giving them advice and encouragement, and also impressing the fact on the graduating class to always consider every member of the faculty as their friend, and not to hesitate, whenever advice was necessary, to turn to their *alma mater*.

CORRESPONDENCE.

A PROPOSAL TO FORM AN ASSOCIATION OF EXAMINING BOARDS.

MAQUOKETA, IOWA, June 20, 1902.

Editors American Veterinary Review :

DEAR SIRs:—I write to inquire what has become of the Association of Veterinary Faculties and Examining Boards? Two years ago I attended the American Veterinary Medical Association at Detroit, hoping to have the pleasure of attending a session of the aforesaid organization advertised to hold a meeting at that time. While in Detroit several inquiries addressed to parties who ought to know concerning the above mentioned organization elicited no information whatever. No one seemed to know anything about it, and I took it for granted they cared less, and I came home with a feeling of disappointment, as I had hoped to obtain a great deal of information which would be of value to the Iowa State Board, who were struggling to perfect an organization at that time. I ask if it would not be proper for the members of the several State boards which now exist in the United States, to get together at Minneapolis at the

coming meeting of the A. M. V. A. and organize a new association of examining boards. There seems to be too much jealousy existing between the various colleges for complete harmony to exist in the Association of Veterinary Faculties and Examining Boards, hence the advisability of a new organization composed exclusively of examining boards. Should you think this subject of sufficient importance, I would be glad to have you make mention of it in the pages of the REVIEW.

Yours very respectfully, W. A. HECK,
Pres. Iowa State Board of Veterinary Medical Examiners.

THE PRODUCTION OF IODISM IN THE OX.

DENISON, IOWA, May 10, 1902.

Editors American Veterinary Review :

DEAR SIRs :—In the April REVIEW, on page 39, a question is asked regarding the length of time required to produce iodism with the quantity given. In reply will say that iodism was produced in Tenth Laird twice—the first time it took eight days and the second time six days before noticeable ; both times he received one drachm (3i) twice daily in his water and was fed on ground oats and bran while under treatment.

If I am giving too much at a dose or the dose too often I would be glad to know it. I figure this way : here in this country of lots of corn, which contains so much starch, it is necessary to give big doses to produce results.

Yours truly, HAL. C. SIMPSON.

[NOTE.—The statement of our esteemed correspondent is quite extraordinary to us. While we have never given the iodide to bulls, we have given it in very much larger quantities and for longer periods to cows and horses, without ever having seen iodism manifested. For the reduction of scirrhus cord, four-drachm doses twice daily were administered to a trotting horse for a month, while cows which had suffered from parturient paresis were liberally dosed with it prior to a subsequent parturition. So that the note referred to by Dr. Simpson was called forth by the ease with which it had occurred in his experience.—EDITOR.]

DR. J. I. GIBSON HONORED.—At the annual meeting of the Iowa State Board of Health, May 14, the following preamble and resolutions was unanimously adopted : "Whereas, the services of our associate, Dr. J. I. Gibson, late State Veterinarian, as a member of this board have ended by expiration of his term, and whereas, we the members of the State Board of Health recognize in Dr. Gibson an able and conscientious member ; therefore, resolved, that we express to Dr. Gibson our appreciation of the valuable services he has rendered the State while a member of this board."

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

Secretary Stewart notifies us that the programme for the Minneapolis meeting is nearing completion, and the following papers have been promised, with several more under consideration :

"The Veterinary Profession, Past, Present and Future," by Prof. D. McEachran, Montreal, Quebec.

"External Ulcerative Ano-Vulvitis of Cattle," by Dr. J. J. Repp, Ames, Iowa.

"So-called Contagious Ophthalmia of Cattle," by Dr. T. D. Hinebauch, Fargo, North Dakota.

"Hospital Management of Dogs," by Dr. Chas. E. Ellis, St. Louis, Mo.

"Serums and Serumtherapy," by Dr. E. A. A. Grange, New York City.

"The Relationship of Veterinary Science to the Medical Profession," by Dr. D. King Smith, Toronto, Ontario.

"Barrenness in Bovines," by Dr. Chas. Schmitt, Dodgeville, Wis.

"Poisonous Stock Foods," by Dr. N. S. Mayo, Manhattan, Kan.

"Malarial Fever in the Horse," by Dr. F. Torrance, Winnipeg, Manitoba.

"Some Features of the Texas Fever Problem," by Dr. W. C. Rayen, Nashville, Tenn.

Titles of papers by the following members have not been ascertained ; Drs. Leonard Pearson, Philadelphia, Pa. ; S. D. Brimshall, St. Paul, Minn. ; J. S. Anderson, Seward, Neb. ; W. L. Williams, Ithaca, N. Y. ; M. E. Knowles, Helena, Mont. ; C. A. Carey, Auburn, Ala. ; M. Jacob, Knoxville, Tenn. ; C. H. Howard, Calumet, Mich. ; W. Horace Hoskins, Philadelphia, Pa. and R. P. Lyman, Hartford, Conn.

The West Hotel has been selected as headquarters, and the meetings of the association will be held in the assembly hall of the hotel. The local committee have secured rates from a number of hotels and private boarding houses near to the headquarters, and a list of these with addresses will be sent to all the members that they may arrange for quarters prior to the meeting. The fact that the Minnesota State Fair will be in

progress at that time will make it necessary to engage apartments before arrival in order to make sure of them.

The railroads have granted a $1\frac{1}{3}$ fare transportation on the certificate plan. Those living within the concessions of the State Fair may secure a better rate.

The local committee of arrangements are planning many special features for the entertainment of all who come, and more especially the ladies. The numerous beautiful lakes and pleasure resorts in close proximity to the twin cities of the north offer many attractions, and particularly among these is Lake Minnetonka, upon the shores of which it is proposed to hold the banquet, in which it is hoped that the ladies will have a part.

The new building for the veterinary department of the State University has been completed, and in this building there is a clinic room with an amphitheatre, and arrangements are about completed for a series of demonstrations of surgical procedures at the clinic to be held after the close of the meeting, full details of which will be given in the August REVIEW.

The Chicago, Milwaukee & St. Paul Railway will probably carry most of the veterinarians from Chicago to Minneapolis. In the June REVIEW Dr. A. H. Baker announced that he and Dr. Hughes were perfecting arrangements with the management of this splendid road to furnish special sleepers, and, should the number be sufficiently large, a special train, from Chicago on the night before the convention. Most of those attending will pass through Chicago, and it would make the journey very pleasant if a large party were to be made up there. This road has been actively seeking the patronage of the members, and they guarantee the best accommodations and courteous treatment. See the announcement in the advertising department.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

In the June REVIEW the full minutes, President's address and much other important matter which transpired at the annual meeting in March was published. This is here supplemented by the full reports of the most important committees, and will be completed in the August number.

REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION.

By JACOB HELMER, D. V. S., Chairman Com., Scranton, Pa.

A few years ago in this country, instruction in the scientific

practice of veterinary medicine was a nextception in the literature to which the English reading and speaking veterinarian had access. Only a few valuable English works were on the market. Yesterday a professional library in the office of a veterinarian was a curiosity; to-day the practitioner who does not possess one is liable to the charge of being non-progressive. Without a library for reading and reference it is impossible to keep abreast with the educational advancement around us.

The fact that new books continue to appear, shows that there must be an increasing demand, and the more we become a professional body of readers, the more and better literature will be placed at our disposal to read.

Among the more recent additions we find:

Outlines of Clinical Diagnostics of the Internal Diseases of Domestic Animals, by Prof. Dr. Bernard Malkmus, of Hanover, Germany, translated by Drs. White and Fisher; Diseases of Poultry, by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry; The Sheep, by Dr. Wm. A. Rushworth; Anatomy of the Cat, an introduction to mammalian anatomy, by Professors J. Reighart and H. S. Jennings, of the University of Michigan; The Diseases of the Cat, by J. Woodroffe Hill; Shields' The American Book of the Dog, edited by G. O. Shields, Coquina Editor of Recreation; Veterinary Materia Medica and Therapeutics, by Kenelm Winslow, of Harvard University; Compendium of Bacteriology and Blood Serum Therapy, by Prof. Paul Jess, Charlottenberg, Germany, translated by Prof. Paul Fisher, of the Veterinary Department, Ohio State University; Text Book of Opthamology for Veterinarians, by Prof. Moeller, of Berlin, translated by Prof. Paul Fisher; Lameness in Horses by Prof. Jos. Hughes, of the Chicago Veterinary College; Bovine Obstetrics, by M. G. Debruin, Instructor of Obstetrics at the State Veterinary School, Utrecht, translated by Dr. W. E. A. Wyman; Synopsis of Prof. Quitman's lectures on Veterinary Materia Medica in Chicago Veterinary College; Synopsis of Prof. Baker's Lectures on Theory and Practice of Veterinary Medicine and Surgery, in Chicago Veterinary College; Clinical Veterinary Medicine and Surgery, by Prof. P. J. Cadiot, Alfort Veterinary School, France, translated by John A. W. Dollar; Manual of Veterinary Microbiology, translated and edited by Dr. R. R. Dinwiddie, of the Arkansas State University, Agricultural College and Experiment Station; Guide to Practical Meat Inspection, by Dr. F. Fishchoeder, Germany, translated by Dr. A. T. Peters, Investigator of Animal Diseases, United

States Experiment Station, University of Nebraska; *Methods of the Examination of Milk*, compiled by Dr. Paul Sommerfield, of Berlin, translated by Dr. A. T. Peters and R. S. Hiltner, A. M., of the University of Nebraska. A few of the older standard works on milk inspection are:

Analysis of Milk and Milk Products, Leffman & Beam, published by Blakiston, Son & Co., 1012 Walnut St., Phila., Pa.; *Outlines of Dairy Bacteriology*, by H. L. Russel, sold by the author, address Madison, Wisconsin; *The Chemistry of Dairying*, by Harry Snyder, Chemical Publishing Co., Easton, Pa.; *Testing Milk and its Products*, by Farrington & Wall, Mandota Book Co., Madison, Wisconsin; A valuable pamphlet entitled *The Newer Remedies*, by Koblentz, published in New York; *Special Surgery of the Upper Air Passages of the Horse*, by Prof. A. L. Merillat, of the McKillip Veterinary College, Chicago; A new work on *Veterinary Medicine*, in four volumes, by Prof. Jas. Law, Veterinary Dep't, Cornell University.

The valuable catalogues of standard veterinary publications sent free by Wm. R. Jenkins, 851 and 853 Sixth Ave., New York, and the Eger Supply House, 34 East Van Buren St., Chicago, Ill., should be in the hands of every veterinarian in the United States.

But whether a practitioner considers he can or cannot afford all the standard works, he should at least avail himself of the veterinary journals published here. A foreign journal would also be good, as well as a professional periodical on human medicine and surgery.

We should not forget that our American veterinary journals are what we, as a profession, make them. No editor alone can keep a magazine afloat, besides its intrinsic value will always largely depend upon the coöperation of the profession with its brains and patronage.

In July, 1901, both the scientific and lay world were surprised and shocked by Dr. Koch's announcement at the British Tuberculosis Congress, in substance, that the human family is practically immune to bovine tuberculosis. Should Dr. Koch's conclusions prove true, said fact will not obviate the necessity of inspection of animals and their products, and the control work now so rapidly developing in this country. An owner will always desire to weed from his herd any insidious and fatal malady and avoid its re-introduction. Consumers of meat and milk will want only pure and wholesome products. In Germany, where it is the national custom to boil the milk and thoroughly

cook the meat, there is no apprehension of disease or uncleanness. But this prevailing custom there did not prevent tuberculosis from ravaging the herds of Germany, until that government was compelled to inaugurate sanitary measures for the control of the spread of the disease.

Because his name is so intimately associated with our knowledge of the subject of tuberculosis, Dr. Koch was the one to raise the question of that most desirable condition "Immunity of the Human Family to the Bovine Diseases." That there is a reasonable chance for such a question, there can be no doubt, and in asking it Dr. Koch was honest. It is fortunate, however, that the idea was introduced at the Tuberculosis Congress, because that body challenged Dr. Koch's self-assured position, thus lessening the disintegrating influence upon sanitary work of his practically unsupported conclusions.

It is a credit to the State of Pennsylvania, and a fact of which we should be proud, that our State Live Stock Sanitary Board, with its laboratory for original research, had anticipated the experimental work of Dr. Koch by several years, which results are diametrically opposed to those propounded by Dr. Koch. (See Ravenal's report to the Tuberculosis Congress.) Still more recently Dr. Ravenal, speaking of the subject, said as follows: "We have, in the laboratory, had evidence absolutely confirmatory of our former position. We have just published the fourth case of Infection of Man by Bovine Bacillus. On the other hand, we have obtained a culture of the tubercle bacillus from the mesenteric gland of a child, which is extremely virulent for cattle; proving either that the human bacillus has, at times, a virulence for cattle equal to the bovine, or else that the child in question was infected in the first case by the bovine organism. We have had four calves die from inoculation with the human bacillus, and now have a grown animal at the point of death."

During 1900 Drs. Brimhall and Wilson, of the Minnesota State Board of Health, issued a complete and interesting report on a highly contagious and infectious disease of cattle, which it had been their privilege to investigate during the summer.

According to the report, ecchymotic spots and hæmorrhagic areas were found in nearly all the organs and tissues of the body. Lesions were practically limited to hæmorrhagic phenomena. Bacteriological investigation of morbid material resulted in the isolation of the bacillus identified as belonging to the hæmorrhagic septicæmia group, of which chicken cholera,

rabbit septicaemia and swine plague, are members. An infectious disease among wild animals and oxen in Germany has been described and identified as also belonging to the same group.

It appears that Dr. Brimhall and Dr. Wilson were the first in this country to isolate a pathogenic organism from a disease in cattle, which organism resembles, and was classified with those producing the hæmorrhagic septicaemia group of disease described by German writers.

During the last few years there has appeared in Pennsylvania, chiefly in Carbon and Wayne Counties, a disease analogous to that described by Drs. Brimhall and Wilson, of Minnesota.

Descriptions of the symptoms, progress and termination of the disease, as well as the post-mortem findings, are practically the same in the two places. Thus far the bacteriological work on the disease in this State has been futile, as far as the discovery of the bacillus of Loeffler and Schutz, or any other pathogenic organism is concerned. Further, all attempts at direct experimental inoculation from one member of the bovine family to another have failed. The disease appears to be neither contagious nor infectious. It ceases to spread in a few days after the herd has been placed in a field other than that in which the malady originally appeared. Hence it appears to be caused and spread by contaminated food only. The problem has not yet been solved in Pennsylvania.

We are pleased to note the claim made by Copeman, of England, that he has isolated the germ of dog distemper, and has succeeded in producing a vaccine virus which will give immunity to dogs. Prior investigators have made similar claims, and highly vaunted vaccines have been placed upon the market, but as yet we are without the real thing, therefore, let us hope that Copeman has furnished us with an effective means of prevention of the dreadful scourge known as dog distemper. The other most important advances in the bacteriological field during the last year have been in the study of the specific reactions of the blood of different animals. Behring, in Germany, has announced his ability to immunize cattle against tuberculosis. Leclainche, in France, has received a prize from the Academy for the production of a curative and immunizing serum against hog cholera. (Most probably our swine plague). 30,000 animals have been treated with results ahead of those obtained by diphtheritic serum in human beings.

The recently issued bulletin, No. 79, on rabies, by Dr. Rave-nal, is a most valuable contribution to our literature on this disease. The bulletin excels in that it describes and illustrates the method of diagnosing rabies by means of a microscopic examination of the cervical glands.

By this method a diagnosis can be made in from six to thirty-six hours. The idea originated in Europe, but our State Live Stock Sanitary Board was the first to develop and introduce it in this country. When we reflect that the old method, by inoculation, required several days, and the diagnosis was not more certain, the importance and advantage of the one-day method must be appreciated.

Much research and experimental work has been continued in the laboratory of the State Live Stock Sanitary Board during the past year. The work is of exceeding economic value to the State. It deals with the contagious and infectious diseases of our domestic animals, furnishes sure means of diagnosis, upon which depends rational treatment and prospective eradication of disease. Its work fosters health and protects the lives of the people. Its problems require exact solution, and each result is a stepping stone in the growth and progress of the profession. Recent experiments have been conducted there to demonstrate the varying susceptibility of animals to inoculation tuberculosis, and establish the identity of the disease in human and bovine subjects. Again, by what means the disease is extended in stalled herds, and the conditions most favorable to rapid expansion. The value of sanitation to cure the malady in the incipient stage, and to retard its progress in the more advanced stages. The influence of unsanitary conditions and surroundings upon the spread of the malady in the herd and upon the progress of the disease in victims under unfavorable conditions. The comparative value of curative measures. The development of points in diagnosis and how the tubercle bacillus may enter the milk. Practical sanitary measures for the repression of tuberculosis on a large scale as in this State, not only tuberculosis, but anthrax, black leg and other contagious and infectious maladies, against which it aims to fortify farmers free of charge. It has devised a practical method for the treatment and eradication of contagious abortion in herds. Tested the value of various disinfectants used in destroying the morbid products and virus of disease. It has demonstrated that the cattle in this country may and do suffer from a lung trouble resembling pleuro-pneumonia, but caused by a fungus growth in the lungs,

the *aspergillus fumigatus*. It is now at work upon a hitherto unrecognized and fatal malady among cattle in this State resembling anthrax, but which disease does not appear to be contagious. The work of the laboratory is increasing each year in the number of problems presented, the demands of the farmers and the morbid material sent by veterinarians and others for examination and diagnosis.

When we reflect upon these things, we know that the veterinary profession in this State would practically be at sea without such a laboratory. It would be groping in the darkness on scientific problems for want of a search-light, which also prevents retrogression. The laboratory is a school to each intelligent and progressive veterinarian. It means a place for him to send specimens, report the cases of difficult diagnosis and receive instructions free of charge. It is open daily for his use.

But in addition to the work of the character mentioned, the laboratory is self-sustaining. It has manufactured for use in the State more than enough tuberculin, vaccines and mallein to defray the cost of its maintenance. Its products, for free distribution, if purchased in the market, would cost the State more than annually the whole expense of the laboratory and the research work done there. The laboratory is supported by a special appropriation from the State. Originally the amount was \$12,000 for two years; in 1900 the appropriation was cut to \$8000 for two years; last year we asked for \$6000 a year and were granted \$5000. Now, suppose that the State grants us \$5000 a year for the support of the laboratory, and the latter furnishes products to the amount of more than \$5000, what has the laboratory cost the State? Again, consider the value of the original discoveries made, and the knowledge imparted. But the original object of the State in creating the laboratory was to protect her extensive live stock interests, which are estimated to suffer six million dollars annually from preventable causes. In the light of this comparison, what does not the State owe the laboratory? Instead of \$5000 it would pay the State of Pennsylvania to appropriate for this laboratory \$50,000 for its use and expansion, to meet the ever growing need of such work. We feel sure that were this subject properly presented, and if the majority of our legislators could be brought to understand the matter thoroughly, ample funds would be provided. As it is, we do not complain, but it would seem necessary that more money be forthcoming in the future in order to meet the ever-

increasing demand upon the laboratory for scientific work. If each veterinarian would educationally influence his legislative members, and induce friends to do so, we could have for our laboratory all we need and want. Just in proportion to the degree of unity and harmony in our ranks will our efforts be characterized by strength and rewarded with success.

The question of what effect mechanical inventions, tending to displace the horse, will have upon the future of the veterinary profession, is one which has caused deep interest and concern everywhere, but especially to the practicing veterinarian. Common sense teaches us that the effort to do the world's work with machinery is not spasmodic nor unreasonable. The automobile in its present crude and unsatisfactory form is yet perfect enough to guarantee its permanency. Instead of the so-called fad disappearing, it will continue to increase, and each season will bring forth better machines for less money, and more of them.

No one will deny the fact that the vast majority, if not all veterinary students, enter the profession because they think there is money in it, because the profession is not crowded, and that it will afford them a better livelihood than anything else at hand. If, later in life, a few find that they were adapted to the requirements of the profession, it comes to them as a surprise.

As in all professions, the young veterinarian longs for a city practice, which, in many instances, proves an alluring pitfall. Undoubtedly the cities afford more lucrative practices, because cities contain many horses in a small area, because there is something to do; besides there is money with which people are willing to part in order to have their animals properly cared for.

To veterinarians outside of cities the automobile question has little interest. There will be always as much veterinary work to be done in the country as now. The question will not effect men who fit themselves for state and government employ and receive a salary. The city veterinarian is the only one who will be injured by the successful advent of the automobile for semi and heavy draft purposes.

There can be no longer any question about the application of sufficient power to road vehicles for all purposes. The machines develop sufficient power to climb the highest mountains; then, again, the power cost is merely nominal, a few cents a day. In successful business it is necessary to reduce expenses. If a machine can be utilized that is cheaper than a horse, the latter will

disappear. Machinery has in the past displaced many kinds of hand work and thrown thousands out of employment. Labor-saving machinery has been a potent agent in the production of hard times.

There is no more sentiment about the use of horses than about the use of man. The moment the horse cannot compete with the machine, out he goes. These are facts for the young veterinarian, now on the first round of his professional ladder, to contemplate.

If, to-day, you should step into France, the birthplace and home of the automobile, you would find their manufacture a booming industry. Exhibition upon exhibition is the thing of the day, and, without doubt, the demand will increase. Thus far the application has been limited practically to small and fancy vehicles for pleasure. Light draft vehicles have not been produced in anything like the same proportion, and but few heavy draft machines are seen. Hence we see that the automobile is very popular in France. Its application to semi and heavy draft purposes there is only a question of time.

But in his struggle for survival against the automobile, the horse has a few factors in his favor. The machine, in its present form, must have smooth and dry roads, macadamized roads or their equivalent, the year round. Most machines are so constructed that during cold weather heat is rapidly abstracted from the exposed generators. Hence the machine suffers or burns from the increased amount of combustion necessary to supply sufficient power. The automobile, in its present form, is better adapted to a warm than a cold section, to a dry than a wet locality, to a level than a hilly country. The question of its utility at the present time is one of locality. The horse is adapted to the world; and but few conditions are fatal to him.

The great problem with the inventor is not how to make a machine go, but how to protect it from the disintegrating influences contingent upon bringing it into use to meet all the requirements under unfavorable conditions at the least possible cost. If automobiles could be run on rails, the inventor's dream would be speedily realized. But, is not this realization far off? One by one we see the large automobile concerns, for heavy draft machines in our large cities, going to the wall. On the other hand, the wagon and carriage business is prosperous, and while wagon materials of all kinds are much higher than a few years ago, nearly all manufacturers report a greatly increased trade. The automobile has not thus far displaced the

horse for any purpose, because people who have means to purchase machines cannot afford to try to get along without horses.

Concerning matters of legislation, Stile's Bill No. 51, introduced in the legislature last Spring, was a surprise of no little importance to the veterinary profession in Pennsylvania.

The bill provided for the re-opening of the veterinary registry lists throughout the counties of the State for one year, on the ground that there were still men unregistered who were legally entitled to register under the old law, and who, for one reason or another, had never taken advantage of the opportunity.

The defeat of this obnoxious bill was just and serves to show what may be accomplished by united effort. But while we did exceptionally well and have reason to congratulate ourselves, yet there is reason to believe that we might have done better. Had we contended not for the defeat of this bill, but for its amendment only, and had been successful, it would have had the effect of breaking the decision of Judge Schuyler, of Easton, viz.: That you cannot limit the time of registration of one who is legally entitled to register. At the same time the Board of Examiners could have had accorded it the power to examine the credentials of those who might present themselves as legally entitled to register according to the decision. It follows that those not able to prove their claim could no longer find protection under the decision, which, by such a method, would have been rendered imperative. Having lost the opportunity afforded last Spring, it now behooves the Board to evolve some other plan. As it stands, Judge Schuyler's decision is right and just. It is a strong decision, and one that cannot easily be broken. There is an old saying, "If you cannot stem the tide, float gracefully with the stream." Obey the decision, make provisions for such old men as can show they were legally entitled to register under the law. Thus Judge Schuyler's decision may prove a help instead of an obstacle, a hint to clear the field for proper and successful action.

Another interesting bill, last Spring, passed both houses of the legislature, and received the signature of the Governor. This ingenious piece of legislation aims to secure a pure and wholesome milk supply for cities of the second class only. In such cities it provides that the sale of milk shall be contingent upon the possession, by the seller, of a proper license, issued by the Department of Health through councils. The bill empow-

ers councils to enact legislation requiring all herds that furnish milk to the city to be properly inspected by a veterinarian. It provides both for a physical examination and the tuberculin test. The bill covers the ground of complete inspection at the fountain head, the dairy. It has a few faults, but contains all that is necessary. It is a workable bill, not being too heavy or rigidly exacting. It is to be regretted that the bill does not become the organic law of the entire State. It served also as a good illustration of what can be done to secure legislation when those desiring it do not ask for the earth.

It is gratifying and portentous that such a widespread interest prevails in the matter of good roads; at least the work is growing along educational lines.

At the International Good Roads Congress, held in Buffalo in Sept., 1901, some very valuable papers were read by representatives from a number of the States.

The Committee of the 3d Annual State Good Roads Association, which met recently in Albany, reported the following among the recommendations for legislation:

1st. That the State be asked to appropriate one million dollars this year for good roads.

2d. That improved highways be maintained by the State, the expense to be proportioned between the State, the county and the town.

3d. That a wide tire law be enacted.

5th. That a change from the labor to the money system of repairing highways be made compulsory.

The problem of good roads in this country appears to be a most difficult one to solve. All things considered, country roads are but little better in Pennsylvania than they were twenty-five years ago. The labor system, still in vogue, of farmers working out road taxes, has been an expensive failure for lack of intelligent road building and sufficient funds with which to build them. No money, no roads.

The idea of the Pennsylvania farmers, expressed through the great organization known as the State Grange, is that a special tax should be levied on all personal and corporate property, and the amount used with that now derived from the taxation of real estate, for maintaining and building our roads. Not only that, but personal and corporate property should be taxed for road purposes equal with real estate, mill for mill.

Thus it will be seen how far two great States differ in their ideas of the solution of the good roads problem.

As far as any considerable results can be apprehended from present methods to obtain them, good roads in the United States, such as may be found in continental Europe, are a Utopian dream. Good roads are not of merely local benefit, but are a necessity to the nation which depends upon them, among other things, for its proper expansion. But unavoidable interstate obstacles interdict the logic of depending upon the States for the acquisition of good roads for the nation. But these and other obstacles will disappear when the United States Government assumes the responsibility of building and maintaining our public highways. In the meantime, let us labor to assist any movement which contemplates the improvement of our roads.

The State Board of Veterinary Medical Examiners during 1901 examined twenty-one candidates for a license of the State and granted twenty licenses. All graduates must come before the Board. Notices are sent to every graduate from every school in the United States and Canada, where the same are registered from Pennsylvania. Twice each year a letter is sent to each of the sixty-eight Prothonotaries in Pennsylvania. The letter reads as follows:

Prothonotary:

DEAR SIR:—In enclosing you a pamphlet copy of the several laws of this State regulating the practice of Veterinary Science in this Commonwealth, I desire to call your attention to several points upon which prothonotaries have erred and which they have had to appeal to the courts for orders to correct the same on their registers.

1st. All graduates of veterinary colleges as stipulated in Section 1 of the Act of April 11, 1889, were given the privilege of registering as such until the first Monday in September, 1895, as provided for in Section 9 of the Act of May 16, 1895. After the first Monday in September, 1895, no registrations were admissible save on presentation of a license from this Board.

2d. All non-graduates or those not possessing a diploma as provided for in Section 2 of the Act of April 11, 1889, were afforded six months, within which they were to make such registration as an "existing practitioner." This period ended October 11, 1889, after which all such registrations were illegal until the passage of the amendment to the law of 1889, on April 29, 1891, when a second period of time was afforded non-graduates or until January 1, 1892, after which time all registrations of non-graduates were illegal.

Will you kindly examine your registry and note that all registrations comply with these requirements? Further, that there is no other registration required beyond the one in the county of original registration, or in other words, one registration covers the entire State.

Again, that no further registrations can be made in this State save on presentation of a license of this Board with the State seal attached.

Trusting this will receive your careful attention and that you will report at once any irregularities on your registry that this Board may take the necessary steps to correct the same, I am,

Very truly yours,

SECRETARY.

During 1901 there were twenty-two alleged violations of the law investigated by the Board, with three additional ones for 1902 to date. Cases were successfully prosecuted in Schuylkill and Bedford counties. The Secretary of the Board has made two trips to York and Columbia to institute proceedings. The case in York is on the list for the April term of court. The one in Columbia has been temporarily postponed in order to secure more evidence. The Board has had names stricken from the registry by order of the court in several counties where the same has been allowed to be improperly placed there by the prothonotaries. All records of the Board are carefully filed and retained in the office of the Secretary, and a detailed record is kept of every violation of the law. The profession is better protected in the State than it ever has been, and the law grows stronger each year.

Without the work of the Board, all laws for the protection of the profession in this State instead of being enforced would be a dead letter. As a result the profession would be in the same position that it occupied previous to the enactment of protective legislation. Thus all illegitimate registrations have been prevented by the influence of the Board upon the prothonotaries of the State, and scores of illegal practitioners have been driven from the field through correspondence. Protection by laws, properly enforced, of a profession like ours, does more to dignify it in the eyes of the people than any other influence. Even the dignity derived from the professional education will not compare with it, where the right to practice is not made exclusive.

Along educational lines the work of State Examiners' Boards is no less important. Under their influence college cur-

riculums are altered and improved courses of study lengthened, higher standing for graduation required, besides an efficient barrier is erected against the propagation of cheap schools.

In Pennsylvania the Board means protection to the interests and also gives elevation to the character of the profession. Therefore the integrity of the Board should be zealously guarded to the end that its personnel shall be the best adapted to the purpose.

In closing this subject, would it not be a proper mark of our esteem and appreciation, for this association to frame a resolution thanking Governor Stone for his action in reappointing, against political influences, an original, also a continuous member, now the worthy and competent Secretary of the Board, Dr. W. Horace Hoskins?

I would suggest, for the consideration of this association, the feasibility of having two new committees. A standing committee of three members to be known as the Committee of Membership. The duty of such a committee would be, first, to obtain the name of every worthy and eligible practicing veterinarian in the State. Second, to open correspondence with those not already members, with a view of bringing them into this association, and to render a report at each annual meeting, showing the extent of the work, and what has been accomplished during the year, and all the facts that may be accumulated as a result of the correspondence.

The other committee would be devoted to building up the idea of securing unity and harmony of the profession in Pennsylvania. This committee would not act in reference to members alone, but aim to reach every worthy veterinarian in the State, in order to secure his influence in favor of measures of importance to veterinarians as a professional body.

It is interesting to contemplate that the present year bids fair to excel the past one in the prosperity of the profession's interests. The work of the Bureau of Animal Industry for 1901 shows expansion in almost every direction. It shows that our markets in Europe, in the future, will depend upon the freedom of our herds from disease. That there has at no previous time been greater danger from imported contagion than now. The present number of quarantine stations are insufficient to afford adequate protection, owing to increased business. The number of cattle and sheep exported has increased over other years. We need no longer to import fine grades of cattle, but should introduce our fine breeding animals to foreign stockmen. Prospects

for export trade to foreign countries are excellent, but the supply of good stock is scarcely large enough to supply the home demand. The number of cities where meat inspection is conducted has been increased by 13 per cent. during the year, and the number of carcasses inspected at the time of slaughter by 2,300,000. That there have been a large number of promotions of veterinarians in the Bureau of Animal Industry, and that there is an increased demand for additional inspectors. The report of the chief of the Bureau for 1901, should, on account of its interesting information, be read by every veterinarian.

We note that the last National Horse Show was the most successful ever held in this country. That the good horses have not been as scarce, and, all things considered, as high in the markets as now.

To indicate the status of veterinary education in this country, a few years ago nearly every veterinarian thought he knew everything. Now, nobody knows anything. Is not this a potent indication of the progress of intelligence and education? The world owes you nothing. You owe it the influence of your best faculties. Pay the debt you owe and the present will reward you, while coming ages may not cease to bless you.

REPORT OF THE COMMITTEE ON LEGISLATION.

By W. HORACE HOSKINS, D. V. S., Philadelphia, Pa.

Since our meeting one year ago we have closed a session of our legislature in Pennsylvania, which I have no doubt you are all familiar with. Before this body there were several bills that we were interested in for the welfare of our State Live Stock Sanitary Board and one bill that we were most especially and deeply concerned in. You will recall our adjournment one year ago under a necessity of going to our State Capitol, there to vigorously protest before a committee of the House against the passage of a Senate bill known as the Stiles bill, destined to reopen registrations of non-graduates. Those of you who were among the body that personally protested against the measure will remember the favorable assurances from the Public Health Committee that this bill would not be favorably recommended, and recall the fact that they returned the bill to the House with a favorable recommendation, all at the dictation of certain powerful influences who were using this as well as other pernicious measures for ulterior purposes. Realizing the unwarranted and unmerited strength back of this measure from that hour on until the defeat of this vicious proposition, we were compelled to

wage daily and hourly warfare against this bill and the calling of every veterinarian from Lake Erie to the Delaware to personally use his influence at home and at Harrisburg against this proposed dangerous legislation, and nothing in the world saved us from its evil influences but the almost unanimous flood of protests by letter, by wire, phone and personal visitation, filed with our legislators in the State Capitol. This bill was the greatest test of association worth and professional union, and a triumphant trial of our combined strength. Our present laws have undoubtedly worked some hardships, but these are the great exceptions and should not be counted against the great benefits derived by our people in better educated and trained veterinarians.

Two other measures of interest to us as veterinarians were passed at the last session of the State Legislature one of which will greatly contribute to the efficiency of the work of the State Live Stock Sanitary Board. In compelling the proper disposal of the carcasses of animals dying with infectious and contagious diseases, much will be saved in deterring the spread of these diseases as well as preventing their becoming fixed on farms and grazing grounds.

A second bill was passed whereby the owners of horses and cattle as well as sheep may be compensated for the loss of these animals from the dog tax fund, where they have died or been destroyed as suffering from "rabies." This law, it is thought, will contribute to the more thorough collection of dog taxes, the destroying of homeless dogs and wandering curs and be a source of relief to those who suffer losses through this malady. It may require some modification in that all such losses shall be certified to by the State Live Stock Sanitary Board to avoid possible unjust losses.

By DR. JAS. W. SALLADE, V. S., Auburn, Pa.

As one of the Committee on Legislation, I want to report briefly that as all or most of you are aware the Stiles bill opening the registration period was defeated by our last legislature. The push that went to Harrisburg combined with the individual effort of every member of this association had done its work so well that when I went to Harrisburg a second time, before the final vote on the bill, with a willingness to agree to a proposition to allow such as had neglected either by indifference or through ignorance to register in time, but could clearly demonstrate to the State Board their right to do so, had they availed themselves of the opportunity in time to register, the mem-

bers of the legislature, I found, had been so thoroughly aroused by their home veterinarians that nothing would fit them but a vote to defeat the entire measure. I was delighted to learn that the profession had so much influence, and make this statement so as to encourage you in concerted action upon legislation.

Many of you who were not placed as I was do not realize your strength.

It developed that the legislator was afraid of the influence of his home veterinarian.

I wish to draw attention to a piece of legislation that I believe would work much good to the profession. I merely touch upon the matter, leaving it open for suggestions and thereby hope to draw out the full sense of this association.

I refer to the registration of veterinarians. I would suggest that the next legislature be asked to alter the law by passing an act requiring registration with the State Board every three or five years at a nominal fee, and repeal the act that requires registration with the prothonotary of each county.

In this manner you would support the hands of your Board, keep your register clear and require those not associated with us in this association but who derive the same benefit from the several acts of the Assembly secured at the hands of the Association to contribute their efforts to ours in the advancement of the profession.

REPORT OF COMMITTEE ON ANIMAL HUSBANDRY.

By GEO. B. JOBSON, V. S., Chairman, Franklin, Pa.

In the previous report of this committee, figures were given showing the importance of, and the amount of wealth invested in the animal industry of Pennsylvania. While these figures giving the numbers and estimated value of the horses, cattle, sheep and swine in this State, show the immense capital invested in live stock, it is not merely from a commercial or financial standpoint on which we must base our estimate of the relative importance of this industry to the citizens of our Commonwealth. When we take into account the fact that the wholesomeness of the products derived from our domesticated animals, in the form of meat, butter and cheese, is largely dependent on their health, their sanitary surroundings, and methods of handling these products, we begin to appreciate in some measure the importance of the animal husbandry, in relation to the health of the consumer.

We endeavored to demonstrate the position which the vet-

erinary profession holds to the animal husbandry of this Commonwealth. That the mission of the veterinarian, as formerly understood by his client, lies not so much in curing the diseases of animals, as in their prevention and control, by advising the owner regarding the enforcement of efficient sanitary and hygienic measures which shall prevent the approach of, or control the spread of disease.

The reports issued by the Agricultural Department of the several States, and the Bureau of Animal Industry, are all prominent factors in educating the farmer regarding the necessity of adopting such measures as shall provide for the comfort and sanitary condition of his live stock, and to keep in line with these improved educational advantages enjoyed by our agricultural friends, the education of the successful veterinarian, in rural districts, will necessarily require to embrace a course of study which shall enable him to give intelligent advice in regard to the sanitary housing, feeding, and general care of farm stock. While probably not so essential, a knowledge of the good qualities and points of the various breeds is a very useful qualification.

The State Live Stock Sanitary Board is still fighting the good fight for the control of, and stamping out of bovine tuberculosis. The badly infected herds having been first inspected, those now being tested show a much smaller percentage of diseased animals. While the public, generally, appreciate the good work which is being done by the Board for the control of tuberculosis within our own borders, and preventing the entry of untested dairy and breeding stock into this State, yet there are a few noisy and carping critics, who make wholly irresponsible and unfounded statements regarding cattle inspection, and the tuberculin test, which only go to show their own ignorance of the utility of this test for the detection of tuberculosis. It is to be deplored that a few of our live stock journals are still prejudiced against the tuberculin test as a means for the diagnosis of tuberculosis. A recent communication in one of these journals by a veterinarian resident in a neighboring State was not only a breach of professional courtesy, but a gross insult to the veterinarians of Pennsylvania.

There does not appear to have been any severe epizootic disease among live stock since our last report. A form of hæmorrhagic septicæmia occurred in a herd of dairy cattle near Corry, during the latter part of September, and at the same time in a herd in Warren county. It was characterized by severe hæm-

orrhagic diarrhœa, elevated temperature, and rapid respiration, and in the majority of the animals affected proved fatal in a few hours. At both places the cattle were pastured on poor, unreclaimed land, partly in woods, and the water supply was bad, being the surface drainage from the land. Removal to other quarters, and feeding corn fodder, stopped further extension of the outbreak. On suspicion of anthrax, specimens from animals affected in both herds were forwarded to the Bacteriological Laboratory of the State Live Stock Sanitary Board, but the results were reported negative. One of two of the last animals affected, which lingered for some weeks after being attacked by the disease, was slaughtered for post-mortem examination. The lesions found in this case were only those of simple gastroenteritis. The abomasum, pyloric orifice, and intestine adjoining the organs were intensely inflamed on their mucous surface. The ileo-cæcal valve and colon in spots were also affected in the same manner. The *débris* of dried leaves in considerable quantity, along with corn fodder which had been lately fed, were found in the rumen.

The demand for dairy inspection by municipalities is increasing, although much remains to be done by way of educating the public regarding the advantage of inspection, in providing a pure and wholesome milk supply for consumers. When a system of milk inspection is first introduced in a district, it is well to make the requirements not too exacting, but gradually lead up to that point which will give a good and efficient system of inspection. The difficulty in most cases is not that the milk is of poor quality, but in impressing on farmers and dairymen the necessity for providing enough air space, plenty of light, keeping the stable in good sanitary condition, and having proper conveniences and methods for cooling and handling the milk.

It is with pleasure we note the demand for, and good prices realized for all classes of farm stock, horses, fat cattle, dairy stock and its products, and the generally improved financial condition of the farmer. Usually with this financial improvement the agriculturist desires to improve the quality of his live stock, this increased value creates a demand for the services of the veterinarian when it is attacked by disease, which proves how closely the prosperity of the veterinarian is dependent on the farmer.

REPORT OF COMMITTEE ON ANIMAL HUSBANDRY. NO. 2.

Mr. President and Gentlemen :

This is a subject of great importance to us ; if animal husbandry fails, our practice is gone.

No legitimate industry can suffer without rebounding to the injury of society in general, and most certainly none can take rank ahead of the industry that affords the human family its meat and milk supply as well as the chief part of the power used in tilling the ground, storing, preparing and moving the crops; delivering the articles of commerce to the doors of our homes and moving the engines of destruction and our rough riders in time of war.

From the careful investigation of the *American Agriculturist*, we find a loss of 4 per cent. in farm stock values during the twelve-months from January, 1901, to 1902; the total shrinkage being over \$125,000,000, notwithstanding a moderate increase of numbers in all class of animals except hogs.

The average price of horses has declined 2 per cent.; mules, 1 per cent.; cows, 5 per cent.; cattle, 11 per cent.; sheep, 10 per cent., while hog values have advanced 17 per cent. If this condition prevailed only in the drought-stricken districts, we might consider the cause local, but, in every State, the decline is noticeable and quite uniform. Of course the high price of feeds and forced sales of stock have had their influence; but aside from these, there are plain indications that the upward trend of live stock values are over and on the decline. We hope and trust they will not again reach the ruinous prices which governed the market in 1896.

The average price of hogs increased \$1.11 per head the past year, making a bright prospect for the hog-raiser who is well stocked and well posted in economical production. Prices will doubtless be well maintained for at least one year, owing to the unusual slaughter of store hogs and brood sows, causing a light pig crop this spring. In fact, anomalous conditions are present among the other meat producers (cattle and sheep).

Cattle, known as stockers, can be bought lower than at any time in recent years, while prime beef cattle and veal calves are at top notch. Store sheep and lambs have ruled low, while the well-fatted carcass markets well; giving the man who has capital and understands the science of feeding a chance to make money. It is true that the farmer has shown prudence in hesitating about feeding on corn alone this winter. But cotton and linseed meals and the gluten foods are proportionately lower and can be profitably used, with corn, in making beef, pork and mutton, while the value of the manure heap is greatly enhanced in consequence.

The Eastern farmer who raised one hundred bushel of corn

to the acre and laid in a good supply of nitrogenous foods during the summer and early autumn has been in position to turn the markets to good advantage.

The feeding problem is of first importance in animal husbandry and the veterinarian should be the farmers' ready advisor under the varying conditions.

ALUMNI SOCIETY OF THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

The regular annual meeting was held in Houston Hall, June 18th, 1902, with the following alumni present :

C. J. Marshall, '94 ; S. J. J. Harger, '97 ; Casper Garnett, '88 ; A. F. Schreiber, '88 ; Charles Lintz, '87 ; W. R. Andrews, '00 ; G. W. Homer, '00 ; Charles E. Magill, '93 ; J. Alvin James, '93 ; H. D. Martien, '96 ; Frederick Stehle, '01 ; Edgar W. Powell, '00 ; T. S. Carlisle, '01 ; J. D. Houldsworth, '02 ; F. H. Bradley, '02 ; Fred Weitzel '02 ; A. A. Harmon, '02 ; W. J. Storm, '97 ; H. Fergenbaum, '02 ; H. Baker, '02 ; S. C. Babson, '02 ; Oscar F. Stearns, '02 ; John W. Adams, '92 ; Leonard Pearson, '90 ; S. J. Cole, '02 ; Sam'l Burrows, '02 ; E. M. Ranck, '97 ; and W. Horace Hoskins, D. V. S., American Vet. College, Thos. B. Rayner, V. S., Philadelphia College of Vet. Surgeons.

The minutes of the previous meeting were read and approved, after which we had reports of various officers and committees.

The Library Committee, under chairmanship of Dr. Leonard Pearson, brought to our attention the necessity of libraries in veterinary colleges, and through his efforts a committee was formed to see if the library of the late Dr. Rush Shippen Huidekoper could not be bought. It was the intention of this committee to have a number of contributions made so that this library could be procured for the Veterinary Department of the University of Pennsylvania.

Dr. Rayner was among those who were approached on this subject and out of his generous nature he willingly assumed the responsibility of purchasing the library and presented it to the Veterinary Department. The only restriction Dr. Rayner has placed on this purchase is that it shall be available for all veterinarians throughout the country, and we are glad to say that since it has been placed in the Library building of the University of Pennsylvania, it will be accessible at all times, as this rule prevails there.

This library is presented as a memoir to Dr. Rayner's late son, Moncure R. Rayner, who died while pursuing his course in our department.

Dr. Adams, of the same committee, in making a report under the same heading, said "it is the intention as soon as we have a fire-proof building, to have these books removed to the Veterinary Department proper." He expressed his gratitude in a very pleasing manner to Dr. Rayner, and said that he hoped we would show our appreciation by our assuming the task of adding to this munificent gift.

Dr. Harger, in making a few remarks in reporting on the same committee, said "that Dr. Rayner wishes to improve the status of the profession from his extreme love for the same." Dr. Harger, who knew his son so very well, who took a great interest in his studies, referred to the fact that had he not been taken from us, he would probably be one of the shining alumni of our department now.

The further reference to the report of this gift will be found under the head of resolutions.

This report was accepted as above, and ordered to be spread upon the minutes.

The report of the other library committee was not available; this committee having been recently appointed, did not have time to prepare a report.

The Secretary and Treasurer reported the financial conditions of the society, which shows it to be in a prosperous state. A number of the graduating class showed their interest in the association by enrolling their names on the membership list.

Following this was the annual election of officers, which resulted as follows:

President—A. F. Schreiber.

Secretary and Treasurer—E. M. Ranck.

Historian—S. J. J. Harger.

Executive Committee—Charles Williams, S. J. J. Harger, Leonard Pearson.

Under the head of new business, resolutions were adopted as follows:

WHEREAS, It has pleased Divine Providence to remove from our midst our late fellow alumnus and esteemed friend and colleague, Dr. Frank T. Shannon, whose integrity, noble impulses and professional ability were appreciated by us all; and whose endeavors were always exerted for the welfare and prosperity of the veterinary profession, be it therefore

Resolved, That this association sincerely regrets his loss so early in

his useful career, and extends to his parents its sympathy and condolence in their great loss ; and be it further :

Resolved, That these resolutions be spread upon the records of this association and a copy thereof be transmitted to the parents of our deceased friend and to each of the veterinary journals in the United States.

WHEREAS, In response to the immutable laws of Almighty God there has been called from the strife and turmoil of earthly cares an alumnus of this society, Dr. James Beatty. Again are we reminded of the uncertainty of life, and the certainty of death. We mourn his early demise, not more in response to a sympathetic chord of sadness in our hearts than because we realize the blighting of a bright prospect of future development into a strong manhood, a useful member of society, and a benefit to his profession. His integrity of purpose, purity of character, and loyalty to his many friends endeared him to this society, and made him an associate worthy of emulation. Endowed with a cheerful disposition, and a warm sympathetic nature, he wound about all our heart the tendrils of his love and affection. It may truly be said of him that he was a wise and valued counselor in prosperity, and a sincere friend in adversity. The members of this society, and those to whom his qualifications were best known and appreciated can only bathe his memory in their tears, and lay upon his resting place the wreath of their affection. Therefore, be it

Resolved, That by the death of Dr. Beatty, this society has sustained a loss of one of its brightest, most useful and beloved members, and the University of Pennsylvania a warm supporter and one of its representative men. That the ranks of the profession for the practice of which he had prepared himself will feel the loss of one worthy of the highest honors possible of attainment. And that society at large is deprived of the influence he might have exerted and the good he might have done.

Resolved, That a copy of these resolutions be spread upon the records of this society and that they be published in the " Alumni Register."

WHEREAS, Through the generosity of Dr. Thos. B. Rayner, of Chestnut Hill, the large and valuable library of the late Dr. Rush Shippen Huidekoper has been purchased and presented to the Veterinary Department of the University of Pennsylvania, as a perpetual memorial to his son, Moncure Robinson Rayner, class '96,

Resolved, That we, the alumni of the Veterinary Department of the University, are profoundly grateful for this munificent gift, and do pledge ourselves to do all in our power to enlarge and render efficient the Rayner library. Be it therefore

Resolved, That Dr. Thos. B. Rayner be elected an honorary member of the Alumni Society of the Veterinary Department of the University of Pennsylvania. Be it further

Resolved, That an appropriate tablet inscribed with the name of the donor and his magnificent gift, be placed in the library room of the new Veterinary Building.

A plan was proposed for the perusal of the members present to establish a fund for the library by creating stocks in a building association. This was thoroughly discussed by members present, who are members of various building associations, and

also by Dr. Hoskins, who has been a director of one for a number of years.

A motion to have the Library Committee given power of attorney to formulate plans to start such a fund, to work in connection with the Executive Committee, was unanimously adopted.

W. Horace Hoskins, D. V. S., Alexander Glass, V. S., and John Marshall, M. D., were elected honorary members.

We next listened to an excellent address from Dr. Leonard Pearson, for the proposed plans for the new buildings of the Veterinary Department, which we have every reason to expect to be completed in a very short time.

The following committees were appointed by the incoming President for the ensuing year :

Library Committee.—Drs. Adams, Pearson and Harger.

Special Library Committee.—Drs. Felton, Repp and Mohler.

After a general smoke, this being a smoker instead of a banquet, and listening to various remarks from the alumni present, we adjourned.

E. M. RANCK, *Secy.-Treasurer.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The eighteenth annual meeting was held at the Hotel Cecil, Wednesday evening, April 23. Members present: Drs. Blackwood, Beckett, Bunker, Emerson, Harrington, Howard, May, Peters, Pierce, Rogers, and Winchester.

Applications for membership were received from Dr. John F. Conners, of South Boston, and Dr. Geo. F. Quinlan, of Brookline.

The election of officers for the ensuing year resulted as follows :

President—Dr. B. D. Pierce, of Springfield.

First Vice-President—Dr. H. P. Rogers, of Allston.

Second Vice-President—Dr. Geo. Lee, of Brighton.

Secretary-Treasurer—Dr. E. T. Harrington, South Boston.

Executive Committee—Drs. Austin Peters, Thos. Blackwood, J. R. McLaughlin, W. L. LaBaw, and M. Bunker.

There was a general discussion as to the advisability of changing our place of meeting as a means of increasing the attendance. It was voted to refer to our May meeting for definite action the following motion : " That the contract for the ensuing year with the Boston Medical Library be not renewed, and a contract be entered into with the Boston Veterinary Hospital,

to the same end, if satisfactory arrangements can be made."

The resignation of Dr. Etienne, of St. Hyacinthe, P. Q., was read and accepted, and it was voted that the Secretary send him a letter of regret.

After the business meeting the members sat down to the banquet and passed a very enjoyable evening.

After the banquet the following toasts were proposed by the toastmaster, Dr. L. H. Howard: "Our Association," by Dr. B. D. Pierce; "One of our Oldest Members Honored by the National Association," Dr. J. F. Winchester; "Harvard Veterinary School," Dr. E. C. Beckett; "The American Veterinary College," Dr. M. Bunker; "The Commonwealth of Massachusetts," Dr. A. Peters; "McGill University," Dr. T. Blackwood; "Our Out-of-Town Members," Dr. D. Emerson; "The Bureau of Animal Industry and Sanitary Police," Dr. H. P. Rogers; "Our Secretary," Dr. E. T. Harrington; "Our Profession Across the Water," Dr. H. S. Lewis; "The Ladies," Dr. A. W. May.

The meeting then adjourned.

EDW. T. HARRINGTON, *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting will take place at Brooklyn, on Sept. 9 and 10, the week following that of the A. V. M. A., and arrangements are well under way, insuring a splendid reunion. The members resident in and about Gotham are determined that this year's meeting shall not fall one whit behind those held in Ithaca the past two years.

The local committee of arrangements, consisting of Drs. Bell (Chairman), Berns, Ackerman, Robertson and Kelly, have held several meetings and each has assumed charge of certain parts of the work. Dr. Berns will look after the clinic, which will be held at his large and complete infirmary; Dr. Ackerman will have charge of the hotel accommodations and entertainment. The chairman will coöperate with Secretary Kelly in soliciting a literary programme, and assist the other members in their work, while Dr. Robertson will be a valuable coadjutor and advisor to the whole proceedings.

The first day will be devoted to the business of the society, the reading and discussion of papers, and an evening session will be necessary for this purpose. On the morning of the

second day, the surgical clinic will begin, lasting until the early afternoon, when an excursion to some nearby resort will be tendered the guests, at the terminal point of which a shore dinner will be served.

We advise Empire State veterinarians to mark this meeting down upon their calendars.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order at Lansing, Feb. 4th, by President J. J. Joy. Almost 40 members answered the roll call. President delivered his annual address. A committee was appointed to arrange program of entertainment for the ladies. Minutes of previous meeting were read. Eight new members were elected. Letters from absent members were read.

W. W. Thorburn, Secretary of State Veterinary Board, was expelled.

Dr. J. Hawkins, Prof. Chas. E. Marshall, of the M. A. C., and Dr. H. B. Baker, Secretary of the State Board of Health, were elected honorary members. Resolutions of sympathy on the deaths of Mrs. Wooley and Dr. R. E. Hunt were adopted. Delinquent members were suspended for non-payment of dues.

The following officers were elected:

President—H. F. Palmer, Detroit.

First Vice-President—H. M. Gohr, St. Johns.

Second Vice-President—J. Harrison, Maple Rapids.

Third Vice-President—H. S. Smith, Albion.

Secretary and Treasurer—W. A. Giffen, Detroit.

Directors—Judson Black, J. W. Brodie, D. G. Sutherland, Wm. Jopling, J. J. Walkington and A. McKercher.

The Secretary's report was read. A resolution was adopted giving Secretary \$15 in addition to salary for the year's work. Treasurer's report was read, showing a balance of \$130.16. Committee on Diseases reported. State Live Stock Sanitary Laws were freely discussed.

It was resolved that the Committee on Legislation be empowered to draft amendments to State Live Stock Sanitary Laws, and that said committee be instructed to take such action as may be deemed best to have the amendments brought before the legislature at its next session.

Committee on Intelligence and Education reported.

The banquet was held on the evening of February 4th. Dr.

Geo. W. Dunphy acted as toastmaster. Toasts were responded to as follows: "Our Association," Drs. Brenton, Sutherland, Whitney, Clement, Byers and Cummings; "Legislation," Dr. F. C. Wells; "Our New Members," Dr. H. L. Bellinger; "Our Officers," Dr. H. M. Gohr; "Our Guests," Major H. E. Johnson and Dr. Davis; "Our Bachelor Members," Drs. Smith and McKercher; "Our State Board," Dr. H. F. Palmer; "The Ladies," Drs. Giffen and Jopling.

February 5th.—Dr. Brenton, assisted by Drs. Campbell, Joy, Sutherland, Black and others, demonstrated the following surgical operations: Neurectomy for the cure of lameness, shaking the head involuntarily and cribbing; tenotomy for the relief of stringhalt and bone spavin; operations for spaying in the mare and for the removal of lateral cartilages were performed.

The following papers were read and discussed: "Contagious Diseases of Live Stock in Michigan," Dr. F. C. Wells; "The Work of the Michigan Agricultural College," Dr. Smith; "The Relation of the M. A. C. to Veterinary Science," Dr. G. A. Waterman; "Veterinary Protection," Dr. Chas. Nyce; "Diagnostic Agents," Dr. H. F. Palmer; "The Horse's Stomach," Dr. Wm. Jopling; "Azoturia," Dr. J. J. Walkington; "Anthrax from the Bacteriological Standpoint," Dr. C. E. Marshall.

The following resolutions were carried unanimously:

(1). Thanks of the association be extended to Hon. A. T. Bliss, Governor, for the kind consideration and many courtesies he has shown us during his term of office. (2). Thanking Hon. J. E. Weter for the cheerful and valuable assistance he has given us in our legislation work. (3). That the association put itself on record as favoring higher veterinary education in colleges and a curriculum of at least three years.

Dr. Joy installed the newly-elected President, Dr. Palmer. The President appointed the following committees:

Legislation.—Drs. Giffen, Wells, Dunphy, Black.

Intelligence and Education.—Drs. Whitney, Smith, Waldron.

Diseases.—Drs. Wells, Gohr, Bellinger.

Clinics.—Drs. Waterman, Manning, Irwin.

Finance.—Drs. Hamilton, Farmer, Muir.

A motion to adjourn was carried.

W. A. GIFFEN, *Secretary.*

NEWS AND ITEMS.

DR. F. D. LUCKY and Dr. J. W. Connoway, of Columbia, Mo., were recent visitors in Kansas City.

VETERINARIAN R. J. STANCLIFFE, 8th Cavalry, U. S. Army, has been transferred from Cuba to Fort Reno, Oklahoma, I. T.

DR. THOMAS CASTOR, U. S. inspector in the quarantine field and stationed at Trinidad, Colorado, recently visited his many friends in Philadelphia.

DR. CARL W. GAY, graduate of the New York State Veterinary College, class of '99, is now filling the chair of Veterinary Medicine and Sanitary Science in the Iowa State College, at Ames.

DR. HORACE H. COLLINS, of Elizabeth, Pa., and Dr. Robert W. McKibben have recently been appointed assistant inspectors in the Bureau of Animal Industry and are stationed at Kansas City.

THE Kansas City force of meat inspectors has been augmented by the appointment of Dr. Wilhelm Scheumacher, of Milwaukee, Wis., Dr. James N. Shepard, of Langdon, South Dakota, and Dr. E. M. Nighbert, of Mt. Sterling, Illinois.

DR. T. EARLE BUDD, of Orange, N. J., has been appointed the official veterinarian of the Atlantic City Horse Show, which occurs July 15th to 19th. Dr. Budd belongs to the advanced guard of the veterinary profession of New Jersey, and it is gratifying to announce his appointment.

A DISPATCH from New Orleans, La., of June 21, says that the great prevalence of charbon and glanders among the live stock of South Africa is due to inoculations in New Orleans by Boer sympathizers, and that the virus was obtained from a Philadelphia chemist.

DR. A. M. LEEK, of New Haven, Conn., who has been with Dr. Ryder at the American Horse Exchange, New York City, for some time past, is assistant to Dr. T. S. Childs, at the Saratoga Veterinary Hospital, Saratoga Springs, N. Y., for the summer of 1902.

OTIS MANN, a well-known veterinary surgeon of Stafford Springs, Mass., died June 3, of heart trouble, aged 70 years. While not a graduate, he attended college for two or three years, about 1875, having been a room-mate of the late Dr. Saunders, of Boston, at the A. V. C. From 1880 to 1890 he practiced in Springfield, Mass., and then removed to Stafford, where he built up a large practice.

DR. GEORGE W. POPE, superintendent, has an illustrated article in the *Breeder's Gazette* for June 4 describing the new government quarantine station for the Port of New York, at Athenia, N. J., and the methods of handling and caring for the imported animals who sojourn there previous to distribution throughout the country.

DR. ANDREW HYDE, late of Norwich, Conn., who was recently honored by election to the Presidency of the Connecticut State Veterinary Medical Association, has accepted the position of assistant meat inspector, B. A. I., and is now stationed at Sioux City, Iowa, where he reported for duty on the 6th ult. A studious, conscientious gentleman, he cannot but prove a splendid acquisition to the federal service, while the Nutmeg State will lose one of its brightest and most scientific veterinarians.

GROWTH OF THE AUTOMOBILE.—That very excellent publication, the *Horse-Shoers' Journal*, has been gathering some statistics anent the horseless vehicle, for the purpose of ascertaining the effects of their advent upon the horse-shoeing fraternity. We observe in the long list of cities which are reported that New York and Boston are omitted, and as these cities are the most populous automobile centres the figures as to totals cannot be taken very seriously. However, the *Journal's* object was to show the effects upon the horse, and for that purpose there are certainly enough reported to strike a comprehensive average. The following is a brief *resumé* of the result of the canvass: "Total number of cities reported, 48. Number of automobiles reported in use, 1,975; for pleasure, 1,792; for business purposes, 183. Total number of shoeing shops May, 1901, 2,462; May, 1902, 2,437; showing a decrease of 25 shops during the year. In 29 of the cities reporting, an increase of from 2 to 50 per cent. in the volume of trade is shown over last year. Fifteen cities report conditions as being about the same, while in only four is a decrease reported, these in as many different localities, one eastern and two middle states. To the question 'State what class of people are taking to the auto, whether horsemen or not,' a variety of answers have been received, the vast majority going to show those using them are not horsemen. A few others by horsemen who still retain their horses, and still others classing the use of the auto as a fad." The conclusion reached by the *Journal* editor is: "The workman can say with every regard for fact that no injury has so far fallen to the lot of the trade, and, judging by conditions presented, none is likely to come to us."

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

WE would again direct the attention of REVIEW readers to page 14, in our advertising department. For the past two months we have been calling their especial attention to this particular advertising page, in the interests of a widow of one of your colleagues, whom Providence saw fit to remove from the side of his mate, and leave her to face the stern realities of life alone, and we would not have them forget her now that we have replaced her "book-advertisement" by another (you still have her name and address in your last month's copy), but we know that you will be especially interested in what you find on page 14 *this* month, as it is just what you want to know. Our "bulletins" (advertising pages) are always interesting to our readers, for just that reason, they keep them posted on what is on the market for their especial use and where to get it, and this one, which puts you in touch with the officials of the Chicago, Milwaukee & St. Paul Railway, certainly appears at an opportune time, when you are arranging to go to Minneapolis and wondering which is the best route to get there. Write these people and get your mind settled, so that you can give all the rest of your time to your work up to the hour of starting.

THE Zenner Disinfectant Co., whose acquaintance REVIEW readers made nearly a year ago, have published a little "Booklet," which is very interesting, giving much information about Clydesdale and Percheron horses, Shorthorn, Aberdeen-Angus, Jersey and Guernsey Cattle, Southdown and Shropshire Sheep, Poland-China, Berkshire and Yorkshire Hogs; as exhibited at the International Live-Stock Exposition, Chicago, Dec., 1901; which they will present to any REVIEW reader upon making application, and mentioning the AMERICAN VETERINARY REVIEW.

WHAT a large business has opened up in tablets and granules for canine practice. We know of no Veterinarian now who would think of being without them, and yet the REVIEW first advocated them about three years ago. The Abbott Alkaloidal Co. (ad. on inside back cover) were the pioneers and remain the easy leaders.

PRACTICE FOR SALE.

FOR SALE.—Practice in city of 5,000, county seat of one of the best farming counties in State of Missouri, no other graduate in county. Business will amount to \$1500 a year and increasing. Reason for selling, have accepted position with Government. Price, \$300 cash; don't write unless you have money and mean business. Address, "Business," care of AM. VET. REVIEW, 509 W, 152d St, New York.